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TERRAIN STUDY

OF

HUNTER LIGGETT MILITARY RESERVATION

CAMP ROBERTS

AND

HEARST ESTATE

209860

Prepared by
535TH ENGINEER DETACHMENT (TERRAIN)
CORPS OF ENGINEERS, U. S. ARMY
ARMY MAP SERVICE
Washington 25, D. C.
1956

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RESEARCH ESTABLISHMENT
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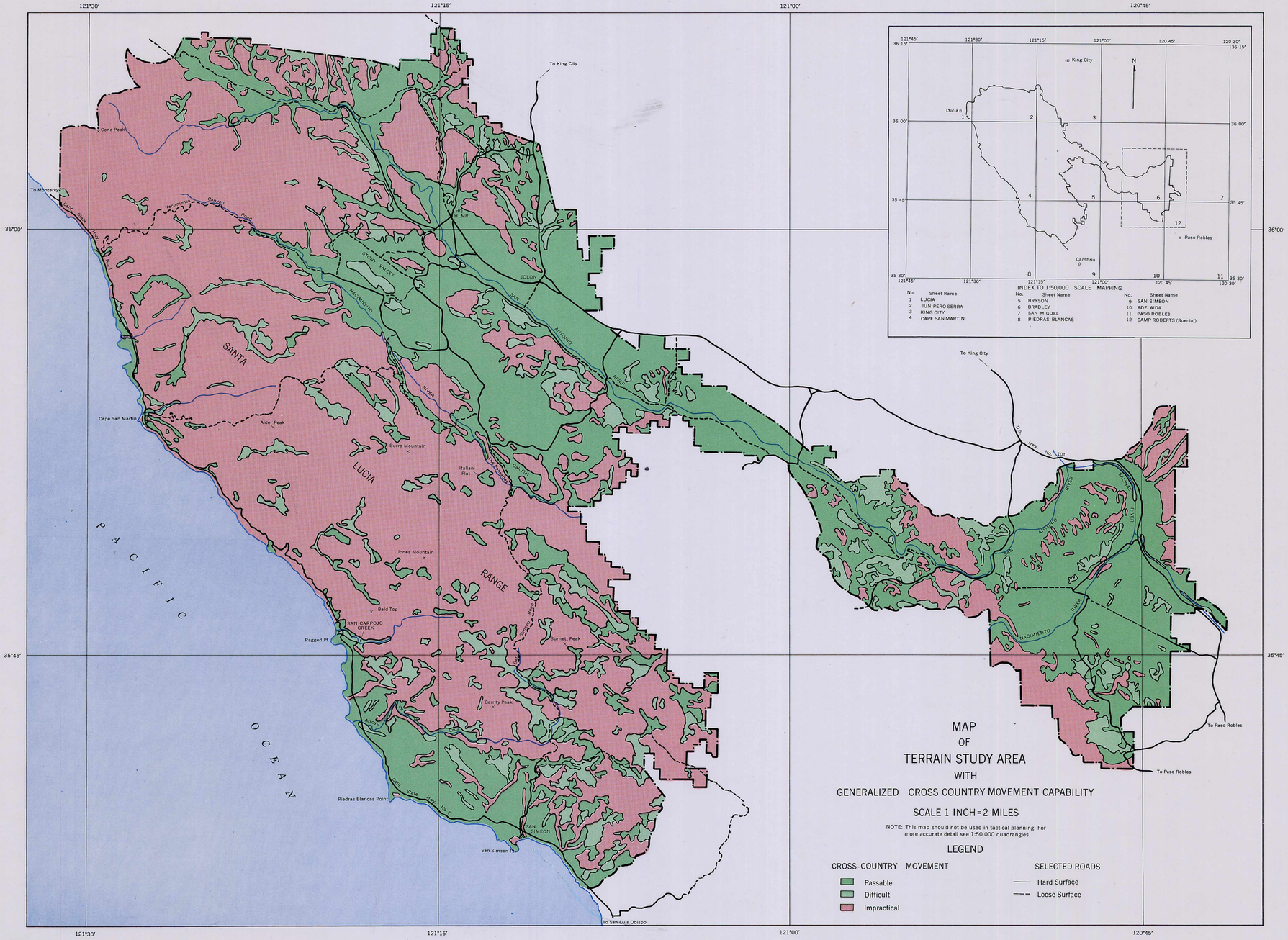
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209860


121°30'
121°15'
121°00'
120°45'
36°00'
35°45'
To King City
Cone Peak
To Monterey
Nacimiento Canyon Road
Calif. State Hwy. No. 1
HLMR
STONY VALLEY
JOLON
NACIMIENTO
SAN ANTONIO
RIVER
SANTA
LUCIA
RANGE
Cape San Martin
Alder Peak
Burro Mountain
Italian Flat
Jones Mountain
Bald Top
SAN CARPOJO CREEK
Ragged Pt
Burnett Peak
Garrity Peak
Piedras Blancas Point
SAN SIMEON
San Simeon Pt
PACIFIC
OCEAN
To San Luis Obispo
To King City
U.S. Hwy. No. 101
To Paso Robles
To Paso Robles
King City
Lucia
Paso Robles
Cambria
INDEX TO 1:50,000 SCALE MAPPING
No. Sheet Name
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5 BRYSON
6 BRADLEY
7 SAN MIGUEL
8 PIEDRAS BLANCAS
9 SAN SIMEON
10 ADELAIDA
11 PASO ROBLES
12 CAMP ROBERTS (Special)
MAP
OF
TERRAIN STUDY AREA
WITH
GENERALIZED CROSS COUNTRY MOVEMENT CAPABILITY
SCALE 1 INCH = 2 MILES
NOTE: This map should not be used in tactical planning. For more accurate detail see 1:50,000 quadrangles.
LEGEND
CROSS-COUNTRY MOVEMENT
Passable
Difficult
Impractical
SELECTED ROADS
Hard Surface
Loose Surface

GENERAL TEXT

I. AREA OF STUDY

The area described in this report includes the Hunter Liggett Military Reservation, Camp Roberts, the Hearst Estate, and adjacent portions of the Los Padres National Forest. The area lies approximately midway between San Francisco and Los Angeles, about 45 miles south of Monterey. Included are portions of the central California Coast Range and its eastern foothills and parts of the Salinas Valley. The total area is about 590 square miles.

II. PURPOSE AND SCOPE

This report summarizes information on terrain conditions which would effect military operations in the study area. It includes data on the extent and condition of the existing road net; the distribution of vegetation types and their effect on military operations; and the feasibility of off-road movement of vehicles as controlled by slope, soil conditions, and vegetation. The report is based on published information, photo-interpretation, and field investigations.

III. GENERAL GEOGRAPHY OF THE AREA

A. Main Geographic Features

The major geographic feature and most important obstacle to cross country movement in the study area is the Santa Lucia Mountain Range, a part of the Coast Range mountain system. The Santa Lucia Range is a series of rugged, heavily vegetated ridges which trend roughly northwest-southeast, parallel to the coast. Steep-walled, deeply incised valleys cut both flanks of the range; west of the mountain crest the streams flow west or southwest and empty into the Pacific Ocean; east of the crest they flow east or southeast into the Nacimiento and San Antonio Rivers, both of which empty into the Salinas River. In the northern part of the area the crest of the Santa Lucia Range is over 5,000 feet in altitude within 3 miles of the coast. Farther south the crest is lower, between 3,000 and 4,000 feet above sea level.

The major portion of the coast is extremely precipitous, with cliffs as much as several hundred feet high, locally interrupted by short rocky beaches. South of the mouth of San Carpojo Creek a coastal lowland several miles wide occurs between the coast and the mountain front. All the ocean beaches suitable for major amphibious operations are located in this area.

East of the Santa Lucia Range are the broad, flat relatively open valleys of the Nacimiento and San Antonio Rivers, separated by low but rugged foothills, which trend northwest-southeast, parallel to the mountains. A second range of hills lies northeast of the San Antonio River Valley. These foothill ranges, because of their steep slopes and heavy cover of brush, form secondary obstacles to movement, channelizing all east-west movement through low gaps and along drainage lines. Movement along the San Antonio Valley and along that portion of the Nacimiento Valley between the Hunter Liggett boundary and the Palisades is relatively easy.

Camp Roberts lies in the Salinas Valley east of the easternmost foothills of the Santa Lucia Range. The topography is one of low barren hills transected by numerous small, intermittent streams tributary to the Salinas, San Antonio and Nacimiento Rivers. These rivers constitute the only significant natural obstacles and are not formidable except during periods of high water.

B. Roads

Two primary north-south roads provide access to the study area: U.S. Route 101, in the Salinas Valley, and State Route 1, which parallels the coast.

There is an extensive secondary road network in the foothills and lowlands east of the Santa Lucia Range, but few roads connect this net with State Route 1 along the coast. Both U.S. 101 and State Route 1 are two-lane paved highways capable of supporting heavy duty traffic. The most direct east-west route from Hunter Liggett Military Reservation to the coast is the Nacimiento Road, which is capable of supporting one-way heavy duty traffic during dry weather. Only one road connects the Hearst Estate directly with Hunter Liggett Military Reservation. For this road to support continuous heavy duty traffic extonsive bridge repair and road maintenance would be required.

C. Soils

The predominant soil types in the study area are silty sands, lean clays, and clayey sands. Silty sands are found in the broad valleys along the Nacimiento and San Antonio Rivers. Soils in these valleys and in some of the tributaries are composed of alluvial materials derived from the adjacent foothills and subsequently deeply weathered in place. The residual soils of the tributary valleys are largely silty sands, although small areas of clay and silty soils are common. In general, the silty sands have a very low plasticity and range from 40 to 70 percent sand. When wet these soils will not support continuous traffic.

The lean clays commonly occur east of the Santa Lucia Range along the small drainage features in the valleys and on the coastal lowlands in the Piedras Blancas and San Simeon quadrangles. Trafficability is better on the lean clays than on the silty sands. The coastal lowland consists of a series of elevated marine terraces, now largely mantled by alluvial fan deposits derived from the adjacent mountains. Both the marine deposits on the terraces and the overlying alluvial fan deposits have been deeply weathered in place.

The clayey sands are not extensive. They occur mainly east of the Santa Lucia Range in the smaller valleys and in higher areas within the larger river valleys. These soils are of medium plasticity with a sand content of between 35 and 60 percent.

Other soil types cover only small areas. The most important are the alluvial sands and gravels along the Nacimiento and San Antonio Rivers. These soils will support heavy traffic unless the poorly graded sands are saturated. Gravelly sands found in the river bottoms will support traffic even when saturated.

The only soils in the study area which will not support traffic when dry are the coastal dune sands. Those sands are not extensive, but are of particular importance because of their location near landing beaches. They present a special problem in stabilization.

D. Vegetation

In the lowlands and foothills east of the Santa Lucia Range and in some of the broad flat valleys within the range, the most common hardwood trees are deciduous oaks, mainly valley oak, blue oak, and Oregon white oak, growing in open stands with very little underbrush or as isolated trees in open grasslands. Digger pine is commonly associated with the oaks in this area, expecially in shallow rocky soils. Coast and interior live oak occur in the foothill belt, especially on moist northeast exposures, where they locally form dense stands.

Along streams, cottonwood, sycamore, and willow are the predominate species. In contrast to the open stands of oak in the same area, underbrush associated with the cottonwood-sycamore-willow stands is locally very dense; it consists mainly of huckleberry, toyon, willow saplings, and wild rose.

On the eastern slopes of the Santa Lucia Range the forest trees are mainly non-deciduous oaks (chiefly valley live oak, coast live oak, and canyon live oak), California laurel, and tanbark oak. Madrone is an important component of the forest at higher elevations. Along streams sycamore, willow, and alder comprise the chief species. Cottonwood is not generally found in the mountains.

In a narrow belt along the crest of the range the forest consists of Ponderosa pine associated with madrone, black oak, and occasionally with sugar pine and Douglas fir. In this belt pure open stands of Ponderosa pine are common. The forests of the west flank of the Santa Lucia Range are composed of non-deciduous oaks, madrone, and California laurel, with dense stands of redwood occurring in valleys and on moist lower slopes as far south as the central part of the Cape San Martin quadrangle. Along streams sycamore, willow, alder, and big-leaf maple are predominant. In the San Simeon quadrangle dense stands of Monterey pine and eucalyptus are present.

In the coastal lowlands of the San Simeon quadrangle and in a few broad valleys within the mountains open stands of deciduous oaks similiar to those east of the Santa Lucia Range are encountered.

Various species of brush, known collectively as chapparel, cover extensive areas in the Santa Lucia Mountains and in the foothills to the east. The chief components are chemise, manzanita, ceanothus, and several species of scrub oak. Digger pine is commonly associated with the chapparel.

On the eastern slopes of the Santa Lucia Range chemise, ceanothus, and scrub oak are predominant, chemise commonly occurring on southwest slopes and ceanothus and scrub oak forming dense thickets in draws and on northeast slopes. At higher elevations scrub oak is less common and manzanita and madrone become prominent.

West of the crest of the range ceanothus is the predominant species, intermingled along the coastal slopes with laurel, which is dwarfed, apparently by constant winds.

B. Weather and Climate

East of the crest of the Santa Lucia Range the annual rainfall varies from about 10 inches in the extreme eastern portion of the study area to approximately 40 inches in the mountains. In pockets on the western slopes of the range annual precipitation amounts to about 60 inches. A mean annual isohyetal map covering the study area, together with a table showing average monthly distribution of rainfall appears on the following page. Mean monthly precipitation at five stations is also shown.

Mean monthly temperatures at Paso Robles vary from a minimum of 43.1 degrees in January to a maximum of 72.5 degrees in August, with a yearly mean of 58.0 degrees. Extremes recorded in 1955 at this station were 111 degrees on 1 September and 19 degrees on 7 January. The average temperature in 1955 was 0.6 degree below normal.

Variation at Piedras Blancas Point is from a low monthly mean of 49.1 degrees in January to a high monthly mean of 57.0 degrees in October. This station recorded extremes in 1955 of 84 degrees on 8 November and 32 degrees on 1 April. Average 1955 temperature was 0.8 degree below normal.

F. Drainage

The major streams in the area of study are the Nacimiento and San Antonio Rivers, both tributaries of the Salinas River. The two rivers flow generally parallel and in a southeast direction to their confluence with the Salinas River, in the north portion of Camp Roberts. The Salinas then flows northwesterly, emptying into the Pacific Ocean north of Monterey, California.

During the dry season, 15 April to 15 November, there is little or no flow in most of the streams in the area. The Salinas, Nacimiento, and San Antonio Rivers, though flowing most of the year, have no surface flow at times.

Mean monthly stream flow in cubic feet per second for the Nacimiento and San Antonio Rivers is shown on bar graphs on the following page.

In December, 1955, the study area, along with the rest of northern and central California, experienced its heaviest rainfall of record. This produced the highest stream discharge of record on 23 December as shown:

River	Drainage Area (Square miles)	Discharge 1/ (Cubic feet per second)
Nacimiento	354	58,600
San Antonio	282	14,500
Arroyo de la Cruz 2/	41	17,700

1/ 1 cfs = 450 gpm = 2 acre feet per day

2/ The Arroyo de la Cruz empties directly into the Pacific Ocean about 10 miles north of San Simeon.

IV. EXPLANATION OF THE MAPS

Three separate maps of each quadrangle are presented in this report: a cross-country-movement map, a vegetation map, and a map showing road and bridge classification. These maps are designed so that they may be reproduced as black and white overlays if necessary.

A. Cross-Country-Movement Maps

The cross-country-movement maps present information on slopes, vegetation, and soil conditions as they affect off-road movement of vehicles with performance characteristics of the M-47 tank. The maps are intended to serve as a guide for operational planning; they should not be used as a substitute for local reconnaissance.

Three terms are used to describe cross-country movement conditions:

Passable: In areas rated as passable slope and vegetation do not constitute obstacles to movement of vehicles and soil conditions will permit essentially unlimited traffic and maneuvering.

Difficult: In areas rated as difficult because of soil conditions slope and vegetation do not constitute obstacles to cross-country-movement, but soils will permit only a few passes of vehicles in trace and limited maneuvering.

In areas rated as difficult because of vegetation limited visibility and/or close trunk spacing seriously impede movement of vehicles.

Impractical: In areas rated as impractical slope, vegetation, soil conditions, or a combination of these factors generally render movement of vehicles impossible.

Areas shown in dark green on the cross-country-movement map are passable during the dry season (15 April to 15 November; during the wet season (15 November to 15 April) most of these areas become difficult or impractical. The following table summarizes the predicted trafficability characteristics of various soils in these areas during the wet season:

Soil Type	Map Unit	Trafficability 1/
Coarse grained poorly graded sands (SP)	A	Passable
Inorganic clays (CH, CL) Clayey sands (SC) Silty Clays (CL)	A_1	Difficult
Silty sands (SM) Inorganic silts (ML) Clayey silts (ML) Very fine sands (ML) Clayey silts (CL-ML) Micaceous silts (MH)	A_2	Impractical

1/ According to Tech. Memo. 3-240, suppl. 11, Waterways Exp. Station.

In areas shown in light green on the cross-country-movement maps dense vegetation renders movement difficult during the dry season. Because of soil conditions, movement in these areas generally becomes impractical during the wet season.

Red indicates areas where steep slopes (over 45%), dense vegetation, or extremely rocky or broken topography make movement impractical at all times.

Areas outlined by heavy black dashed lines have very poor drainage. Fine-grained soils in these areas may not be sufficiently dry to support traffic for as long as 45 days after the end of the wet season. When the surface of these soils drys a crust forms which appears to be capable of supporting vehicles. However, because of the high moisture content of the underlying soil, these areas should be carefully investigated before movement across them is attempted.

Trafficability of some of the areas shown as difficult or impractical because of dense vegetation may be considerably improved by burning.

One important consideration should be kept in mind when using the cross-country-movement maps: Immediately following rains trafficability of well drained soils will improve more rapidly than that of poorly drained soils. At these times, it will be better to choose routes through well drained areas in preference to more poorly drained areas regardless of soil conditions indicated on the cross-country-movement maps.

B. Vegetation Maps

The vegetation maps show principal types of vegetation cover as they affect concealment of personnel and equipment and cross-country movement.

Only the physical characteristics of vegetation are considered in the vegetation maps; species of trees and shrubs present are not indicated, as this information is not necessary for most military purposes. Four principal units are distinguished: (I) open areas, such as grasslands, fields and areas of sagebrush; (II) Open woodland and combinations of grassland and scattered trees; (III) dense woods; and (IV) brush, chiefly chapparel.

The canopy cover, that is, the percentage of an area covered by vegetation ten feet or more above the ground, was estimated from aerial photographs. Ground visibility and effect of each type of vegetation on cross-country movement was estimated in the field.

In many areas vegetation types are intermingled or occur in a mosaic of subdivisions too small to map individually. In these areas only the predominent type is indicated on the map and, where possible, the presence of other types is indicated by a note.

C. Road and Bridge Maps

The road and bridge maps indicate the existing road net, location and type of bridges, and the location of fords, and locked gates. The roads are classified as to width of traveled way, type of road, and load carrying capacity. The bridge information includes the total length, roadway width, overhead clearance, type of construction, and bypass condition.

The road types classification used is taken from FM 5-36, "Route Reconnaissance and Classification". The following types of roads are distinguished:

All-weather (X-type) road: Any road which, with reasonable maintenance, is passable throughout the year to a volume of traffic never appreciably less than its maximum dry-weather capacity. This type of road has a waterproof surface and is affected only slightly by rain, frost, thaw, or heat.

Limited all-weather (Y-type) road: Any road which with reasonable maintenance, can be kept open in bad weather to a volume of traffic which is considerably less than its maximum dry-weather capacity. This type of road does not have a waterproof surface and is considerably affected by rain, frost, or thaw. Traffic may be completely halted for a day or so at a time. Heavy use during adverse weather conditions may lead to complete failure of the road.

Fair-weather (Z-type) road: A road which quickly becomes impassable in bad weather and which cannot be kept open by normal maintenance. This type of road is affected so seriously by rain, frost, or thaw that traffic is brought to a complete halt for long periods.

Several Z-type roads which are impassable during bad weather conditions and only passable to light, mobile vehicles during favorable weather conditions are designated by a different symbol ~~as shown in the map~~

as shown in the map legend. These roads, in addition to having a natural earth surface, have several of the following substandard qualities: grades in excess of 15 percent, roadway widths averaging less than 10 feet, radii of curvature less than 30 feet, deep ruts, and sections subject to landslide and washout.

Most of the firebreaks in the mountainous portion of Hunter Liggett Military Reservation are impassable to vehicles because of steep gradients. Usable firebreaks are shown on the map only where few other roads exist.

GENERAL TEXT

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Soils

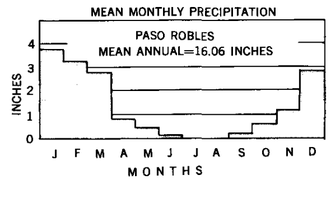
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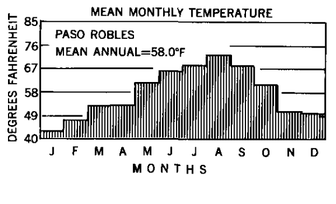
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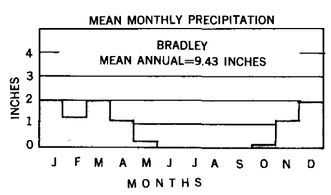
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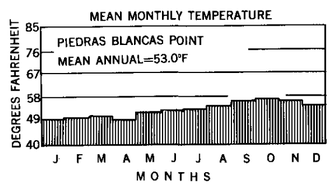
Roads and Bridges

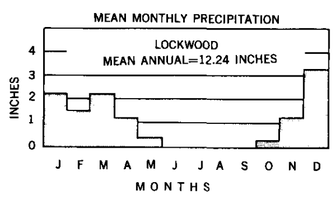
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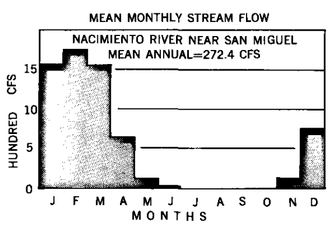


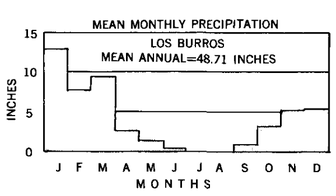


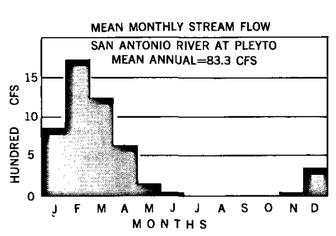


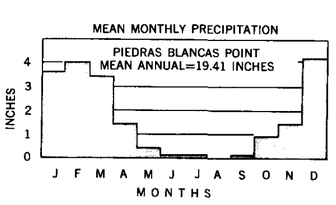




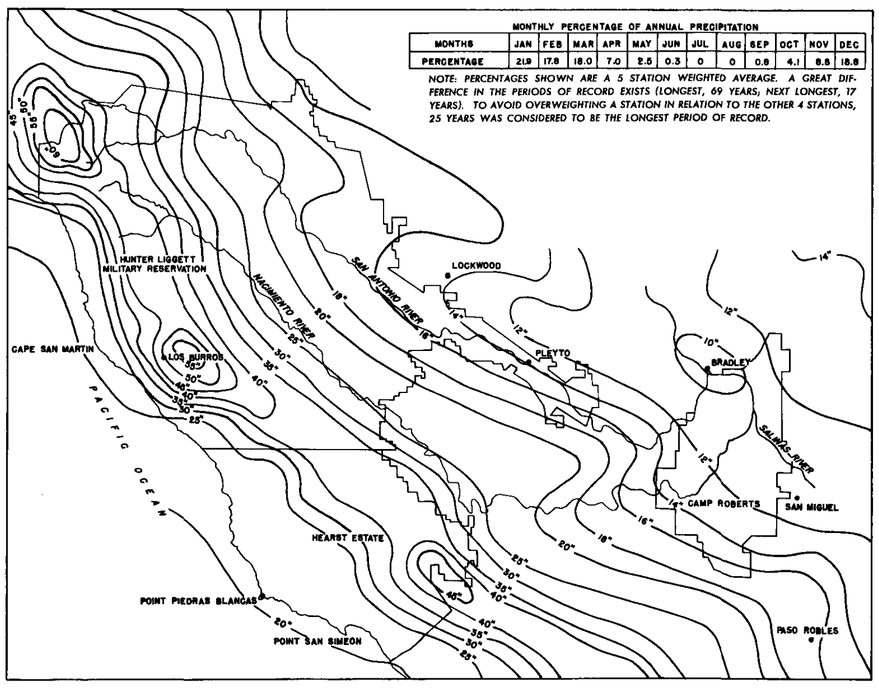








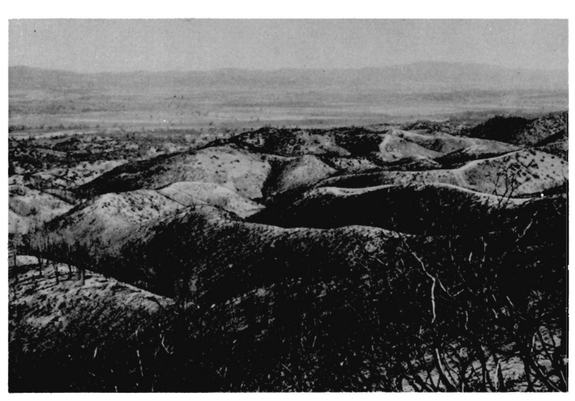
MEAN ANNUAL ISOHYETALS



GROUND PHOTOGRAPHY - GENERAL



Coastal lowland near San Simeon. View east from mouth of Oak Knoll Creek, San Simeon Quadrangle.



San Antonio Valley and neighboring foothills. View northeast from hill south of Oro Fino canyon, Bryson quadrangle.



Sea cliff and mountains north of mouth of San Carpojo Creek, Cape San Martin quadrangle.



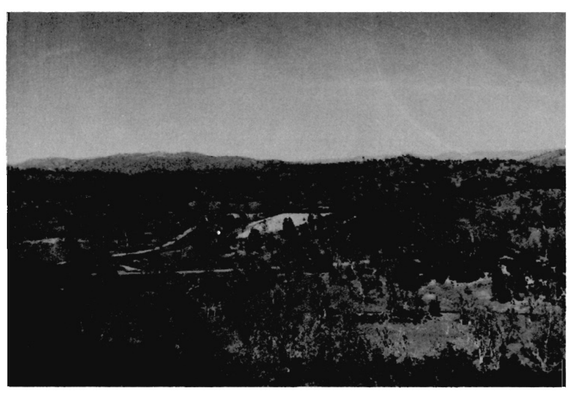
Typical terrain on northeast flank of Santa Lucia Range. View southeast from near Bound Spring, Cape San Martin quadrangle.



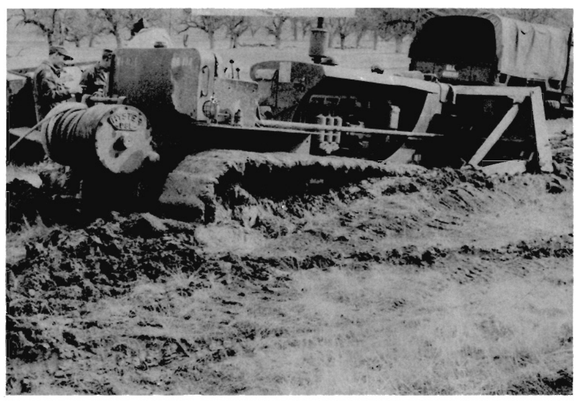
Coastal lowland and mountain front between Arroya Laguna and Arroyo del Cruz, San Simeon quadrangle.



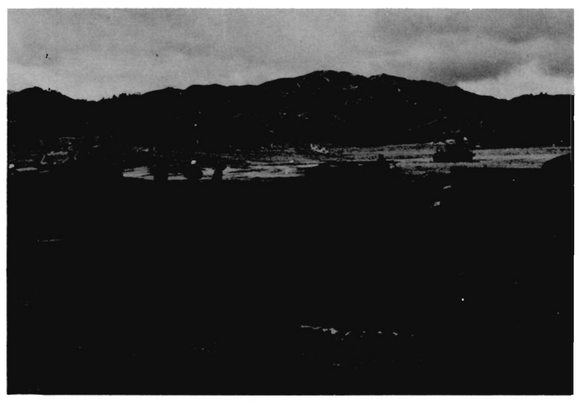
Nacimiento River valley southwest of the Palisades, Bryson quadrangle.



Typical terrain in valley of El Piojo Creek, Bryson quadrangle.



D-8 stuck on first pass in saturated area, Oak flat, Bryson quadrangle, 28 Jan 1955.

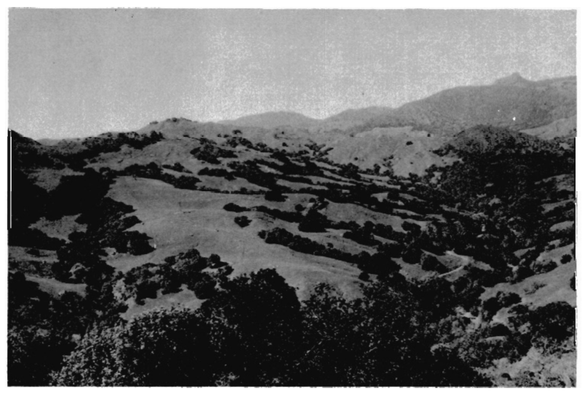


Vehicles stuck in saturated soil in Stony Valley, Bryson quadrangle, 20 Feb 1955.

GROUND PHOTOGRAPHY - VEGETATION



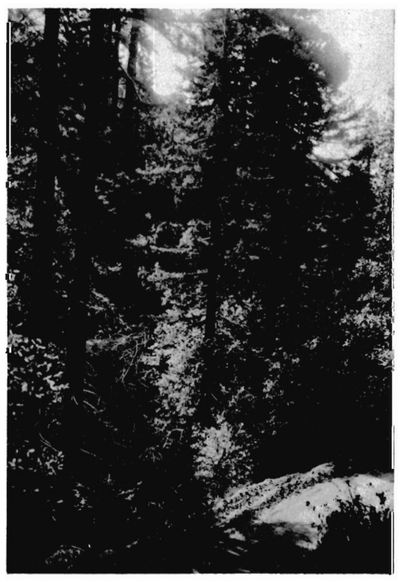
Decideous oaks in open stands east of the Palisades, Bryson quadrangle. (Unit IIA1)



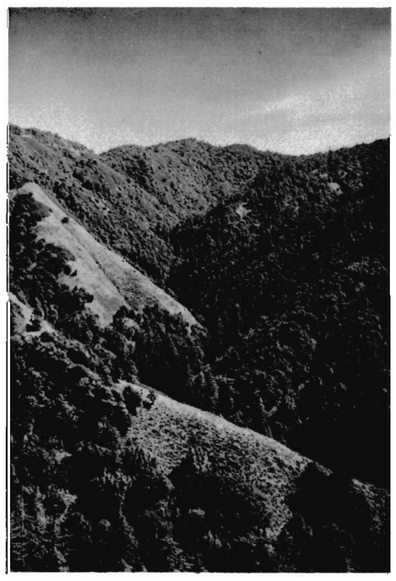
View up valley of Burnett Creek, San Simeon quadrangle showing live oak along gullies. (Unit IIA2)



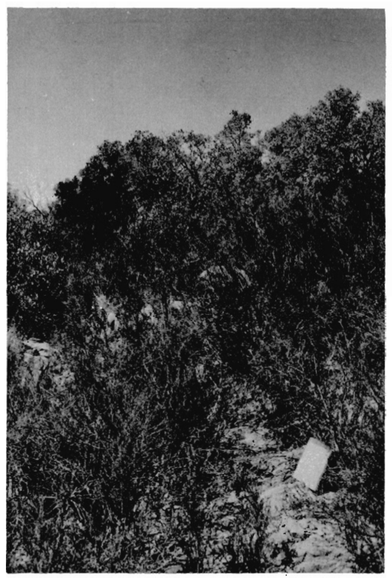
Deciduous oaks in open stand in San Antonio River valley near Jolon, Bryson quadrangle. (Unit IIB1)



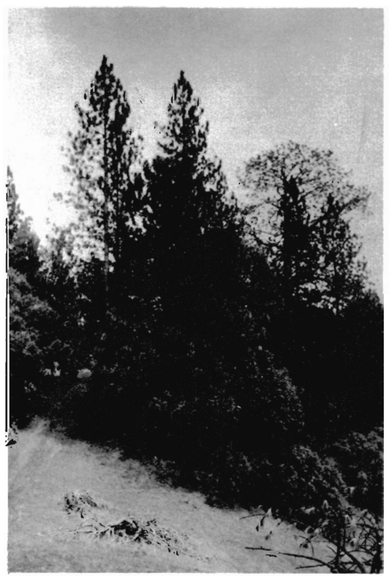
Redwood in valley on west flank of Santa Lucia Range, Cape San Martin quadrangle. (Unit III)



Valley on west side of Santa Lucia Range, Cape San Martin quadrangle. Redwoods in valley; live oaks, madrone, and California laurel on NE (right) slope; chemise on SW (left) slope. (Units III and IV)



Typical stand of chemise (foreground) and manzanita (background) on ridge top near Italian flat, Bryson quadrangle. White object is 12 inches high. (Unit IV)



Open stand of Ponderosa pine, madrone, and manzanita near crest of Santa Lucia Range, Cape San Martin quadrangle. (Unit IIB1)



Open brush in area where extremely rocky condition prohibits movement of vehicles, SE of Oak Flat, Bryson quadrangle. (Unit IVA)



Typical scrub oak on NE slope near Italian Flat, Bryson quadrangle. White object is 12 inches high. (Unit IV)



Typical chemise associated with Digger pine on west side of Mission Creek Valley, Junipero Serra quadrangle. (Unit IV)



Chapparel in Santa Lucia Range NW of Italian Flat, Bryson quadrangle. (Unit IV)



Brush in hills NE of Sam Jones Canyon, Bryson quadrangle. Chemise in foreground and on hilltop on left, ceantohus on left (SW) slope, scrub oak in valley bottom and on right (NE) slope. (Unit IV)

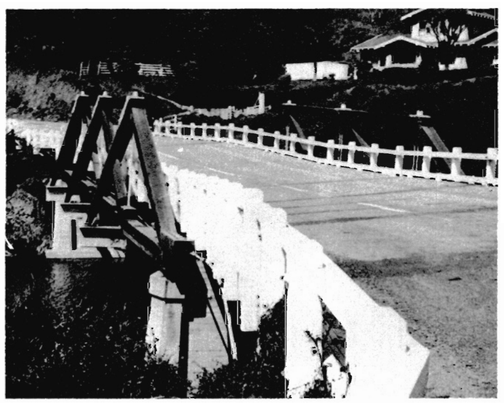


Chemise following a severe brush fire in impact area. Brush on skyline was not burned. SW of Jolon, Bryson quadrangle. (Unit IV)

GROUND PHOTOGRAPHY - BRIDGES



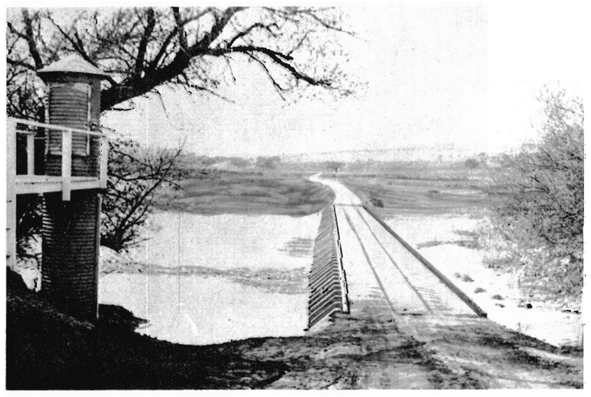
Typical wood trestle bridge found on Hunter Liggett Military Reservation east of Santa Lucia Range. Bryson quadrangle. UTM 641782.



Wood truss bridge spanning San Carpajo Creek on Route 1. Bridge has sagging roadway. Cape San Martin quadrangle. UTM 520590.



Low capacity steel truss bridge over San Antonio River. Bradley quadrangle. UTM 812707.



Bridge over Nacimiento River in Camp Roberts. Consisting of 65 concrete supports and wood flooring. Bradley quadrangle. UTM 998619.



H Street bridge spanning Nacimiento River in Camp Roberts. Bradley quadrangle. UTM 025654.



Low capacity wood truss bridge on Nacimiento Road. Junipero Serra quadrangle. UTM 424865.



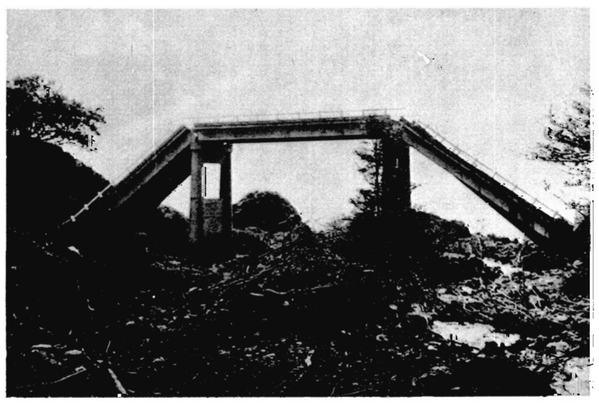
Bridge spanning Villa Creek. Wood trestle construction is typical of the majority of the bridges along Route 1. Cape San Martin quadrangle. UTM 439683.



Single lane temporary bridge on Route 1. Cape San Martin quadrangle. UTM 423694.



Substructure of temporary bridge on Route 1. Cape San Martin quadrangle. UTM 423694.



Washed out bridge over Mill Creek on Route 1. Cape San Martin quadrangle. UTM 362829.



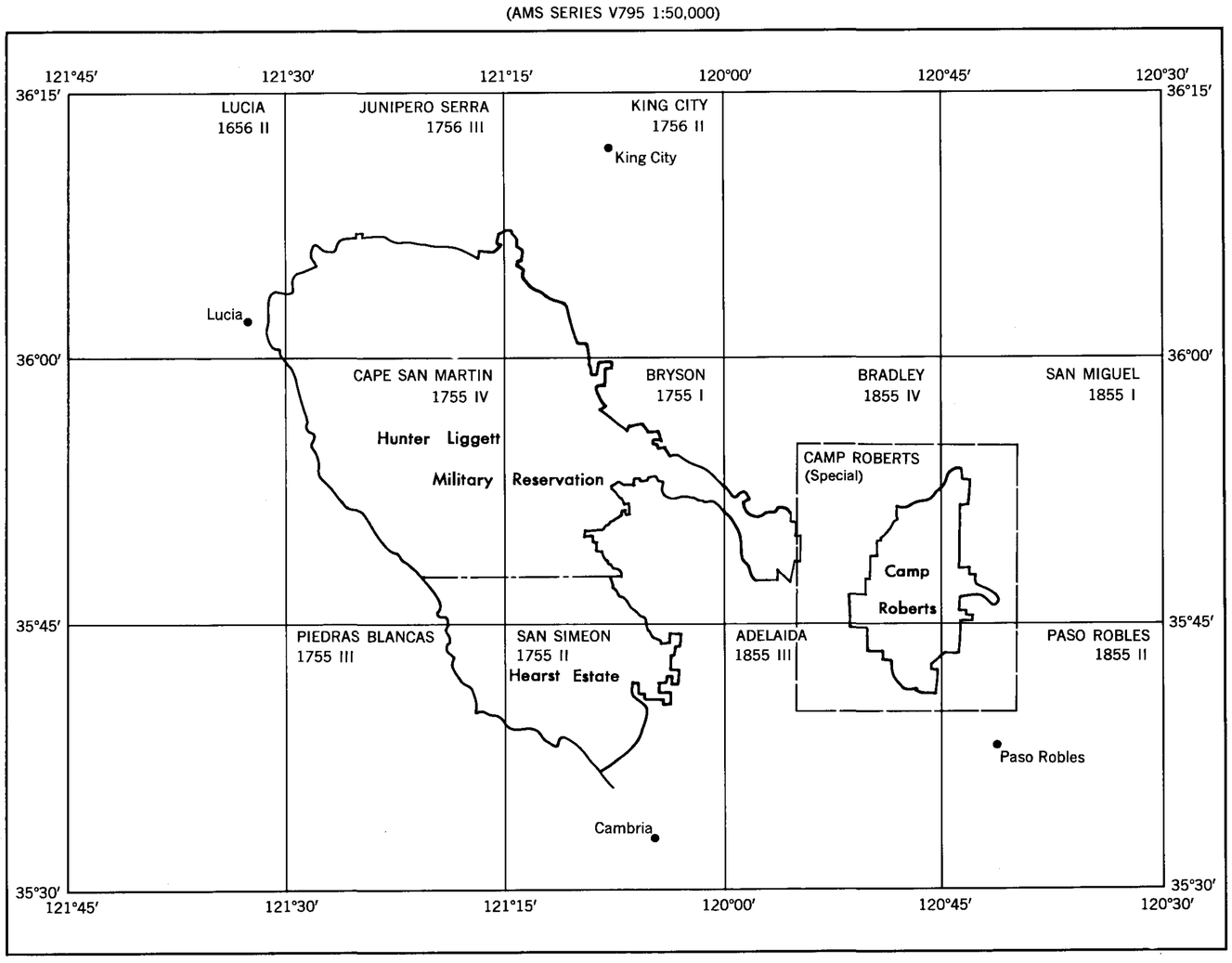
Wood trestle bridge on Hearst Estate-Hunter Liggett Road. Intermediate posts are not resting on the ground. San Simeon quadrangle. UTM 655523.



Substructure of bridge over Oak Knoll Cr on Route 1. Wood posts show signs of rotting at water line. San Simeon quadrangle. UTM 613470.

TERRAIN STUDY
OF
HUNTER LIGGETT MILITARY RESERVATION
CAMP ROBERTS
AND
HEARST ESTATE

INDEX TO MAP SHEETS
(AMS SERIES V795 1:50,000)



CALIFORNIA 1:50,000

EDITION 3–AMS–CCM 1

VEGETATION

SHEET 1756 III
SERIES V795

LIMIT OF STUDY

Prepared by 535th Engineer Detachment (Terrain), AMS, Washington, D. C. Slope determined from California, 1:50,000, Series V795. Vegetation compiled from photo interpretation supplemented by field reconnaissance. Soils classified by laboratory tests. Area limits of soils from Department of Agriculture Soils Surveys, supplemented by photo interpretation and field reconnaissance. Soils trafficability classification from TM 3-240, supplement II, Waterways Experiment Station, Vicksburg, Mississippi.

Scale 1:50,000

1 0 1 2 3 Miles

1000 500 0 1000 2000 3000 4000 Meters

1000 500 0 1000 2000 3000 4000 Yards

CONTOUR INTERVAL 40 FEET

VERTICAL DATUM: SEA LEVEL DATUM OF 1929

TRANSVERSE MERCATOR PROJECTION

HORIZONTAL DATUM: 1927 NORTH AMERICAN DATUM

GRID LINES INDICATE 1,000 METER UNIVERSAL TRANSVERSE MERCATOR GRID, ZONE 10

Rock outcrops

Stream, intermittent

Spring

Low dam

Gaging station

MEAN MONTHLY STREAM FLOW

SAN ANTONIO RIVER AT PLEYTO
MEAN ANNUAL 83.3 CFS

NACIMIENTO RIVER NEAR SAN MIGUEL
MEAN ANNUAL 272.4 CFS

HUNDRED CFS

J F M A M J J A S O N D

MONTHS

RELIABILITY DIAGRAM

Good

APPROXIMATE MEAN DECLINATION 1952
FOR CENTER OF SHEET
ANNUAL MAGNETIC CHANGE 2' WESTERLY

INDEX TO ADJOINING SHEETS

Jamesburg 1956 I; Soledad 1956 IV; Mesa 1956 I; Lucia 1956 IV; Junipero Serra 1956 III; King City 1956 IV; Cape San Martin 1956 IV; Bryson 1956 I

VEGETATION LEGEND

UNIT	VEGETATION TYPE	DENSITY OF CANOPY 1/	GROUND VISIBILITY	EFFECT ON CROSS-COUNTRY MOVEMENT (Based on the characteristics of M-47 tank.)
1	Open areas: grassland, fields, sagebrush, etc.	0–10%	Unlimited by vegetation	Vegetation no restriction
IIA1	Woodland–grass 2/	10–40%	Good	Vegetation no restriction
IIA2	Discontinuous woods 2/	10–40%	Variable	May require by-passing a few stands; generally no restriction.
IIB1	Open woods 2/	40–70%	Good	May require by-passing dense stands; no restrictions on foot troops.
IIB2	Discontinuous woods 2/	40–70%	Variable	Will require by-passing dense stands; area as a whole no obstacle. Brush may hinder foot troops.
III	Dense woods	70–100%	Poor	Generally impractical for vehicles. Brush may hinder foot troops.
IV	Brush	Variable 3/	Variable 3/	Generally impractical for vehicles except on low slopes. Very difficult for foot troops.
IVA	Open brush	0–10%	Poor to unlimited	Generally no limitation to vehicles, locally may hinder foot troops.

1/ Considered 10′ above ground. Estimated for period April–November when all trees are in leaf. During period November–April canopy density is reduced to less than ¼ of these values in woods east of Santa Lucia Range. There is no appreciable change in the mountains as most trees are non-deciduous.

2/ Trees in IIA1 and IIB1 are distributed evenly; in IIA2 and IIB2 they are grouped in dense clumps, commonly along streams or in gullies.

3/ On northeast slopes east of the crest of the Santa Lucia Range canopy density is high and ground visibility is poor; on southwest slopes visibility is fair and density of canopy is low. West of the range canopy density is low and visibility is fair. For 5-10 yrs. subsequent to severe brush fires ground visibility is good and vegetation is no limitation to movement.

REFER TO THIS MAP AS: VEGETATION JUNIPERO SERRA, CALIF.

CALIFORNIA 1:50,000

EDITION 3—AMS—CCM 1

ROADS AND BRIDGES

SHEET 1756 III
SERIES V795

121°30′ — 121°15′ — 36°15′ — 36°00′

LOS PADRES NATIONAL FOREST

HUNTER LIGGETT MILITARY RESERVATION

LIMIT OF STUDY

SAN ANTONIO RIVER

Bear Mtn

Junipero Serra Peak

The Rocks

Herbert Ranch

Leigh Ranch

Relis Canyon Campground

Merle Ranch

Santa Lucia Memorial Park

Indian Ranger Station

Rocklands Camp Island

Twin Peak

Michaels Camp

Rockland Landing

Redwood Spring

Carrol's Spring

Milpitas Creek

Nacimiento River

San Miguelito

Hunter Liggett Headquarters 1.2 mi.

Hunter Liggett Headquarters 6.8 mi.

3.5 mi. to Sulphur Spring Road

3.3 mi. to California 1

Prepared by 535th Engineer Detachment (Terrain), AMS, Washington, D. C. Slope determined from California, 1:50,000, Series V795. Vegetation compiled from photo interpretation supplemented by field reconnaissance. Soils classified by laboratory tests. Area limits of soils from Department of Agriculture Soils Surveys, supplemented by photo interpretation and field reconnaissance. Soils trafficability classification from TM 3-240, supplement II, Waterways Experiment Station, Vicksburg, Mississippi.

Scale 1:50,000

1 0 1 2 3 Miles

1000 500 0 1000 2000 3000 4000 Meters

1000 500 0 1000 2000 3000 4000 Yards

CONTOUR INTERVAL 40 FEET

VERTICAL DATUM: SEA LEVEL DATUM OF 1929

TRANSVERSE MERCATOR PROJECTION

HORIZONTAL DATUM: 1927 NORTH AMERICAN DATUM

GRID LINES INDICATE 1,000 METER UNIVERSAL TRANSVERSE MERCATOR GRID, ZONE 10

BRIDGE INFORMATION

T
Clr. C L
W

C - One way capacity in tons
T - Type of construction (see bridge type symbols)
L - Total length in feet
W - Width of travelled way in feet
Clr. - Vertical clearance in feet and inches
* - An asterisk appearing in the bridge symbol has been used only when a route has an appreciably higher classification except for isolated restrictive bridges. When such a bridge occurs, the route has been given the higher classification.

- Bridge bypass easy
- Bridge bypass difficult
- Bridge bypass impossible

BRIDGE TYPE SYMBOLS

WO - Wood trestle
WOT - Wood truss
SG - Steel girder
SS - Steel stringer
ST - Steel truss
KA - Concrete arch
KG - Concrete girder
KS - Concrete slab

ROUTE CLASSIFICATION (EXAMPLE)

G — WO 30 1100 — 18 — 15X50 — 15X30 — F

15 - Width of roadway in feet
X - All weather road
50 - Route capacity in tons
G - Locked gate
• - Point of change in classification of road
- Bridge bypass difficult
F - Location of ford
K F - Concrete ford)
WO - Wood trestle
1100 - Total length in feet
18 - Width of travelled way in feet
∞ - Unlimited vertical clearance
30 - Class 30 bridge

RELIABILITY DIAGRAM

Good

0°57′ OR 17 MILS

15°45′ OR 280 MILS

APPROXIMATE MEAN DECLINATION 1952 FOR CENTER OF SHEET
ANNUAL MAGNETIC CHANGE 2′ WESTERLY

INDEX TO ADJOINING SHEETS

Jamesburg 1956 I | Soledad 1756 IV | Mott 1756 I
Lucia 1656 II | Junipero Serra 1756 III | King City 1756 II
Cape San Martin 1755 IV | Bryson 1755 I

ROAD CLASSIFICATION

HARD SURFACE HIGHWAY
(All weather road -X)
Class 50 or greater and 2 lanes
Less than class 50 and or single lane

IMPROVED ROAD
(Limited all weather road -Y)
Class 50 or greater and 2 lanes
Less than class 50 and or single lane

DIRT ROAD
(Fair weather road -Z)
Class 50 or greater and 2 lanes
Less than class 50 and or single lane
Not recommended for vehicles heavier than 3/4 ton (Four wheel drive necessary)
Proposed road

NOTES:
1. Routes having road widths of 18 feet or over are 2 lanes.
2. Unclassified roads, trails, and firebreaks should be used only after reconnaissance.

REFER TO THIS MAP AS: ROADS AND BRIDGES JUNIPERO SERRA, CALIF.

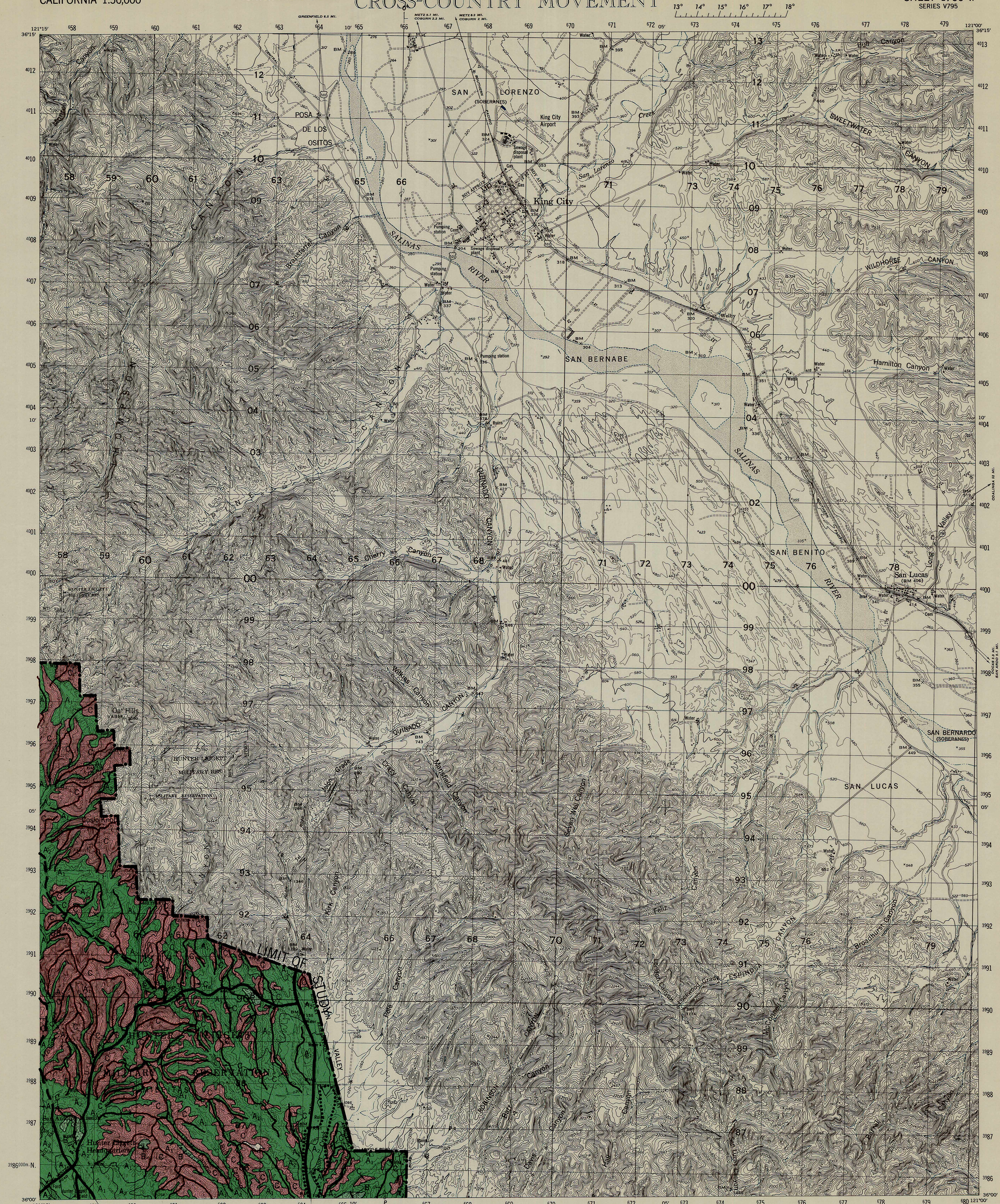
Map not available – not included in this book.

CALIFORNIA 1:50,000

EDITION 3–AMS–CCM 1

CROSS-COUNTRY MOVEMENT

SHEET 1756 II
SERIES V795



Prepared by 535th Engineer Detachment (Terrain), AMS, Washington, D. C. Slope determined from California, 1:50,000, Series V795. Vegetation compiled from photo interpretation supplemented by field reconnaissance. Soils classified by laboratory tests. Area limits of soils from Department of Agriculture Soils Surveys, supplemented by photo interpretation and field reconnaissance. Soils trafficability classification from TM 3-240, supplement II, Waterways Experiment Station, Vicksburg, Mississippi.

Scale 1 50,000

1 0 1 2 3 Miles

1000 500 0 1000 2000 3000 4000 Meters

1000 500 0 1000 2000 3000 4000 Yards

CONTOUR INTERVAL 40 FEET
WITH SUPPLEMENTARY CONTOURS AT 20 FOOT INTERVALS
VERTICAL DATUM: SEA LEVEL DATUM OF 1929

TRANSVERSE MERCATOR PROJECTION
HORIZONTAL DATUM: 1927 NORTH AMERICAN DATUM

GRID LINES INDICATE 1,000 METER UNIVERSAL TRANSVERSE MERCATOR GRID, ZONE 10

SUPPLEMENTAL LEGEND

Ridge lines

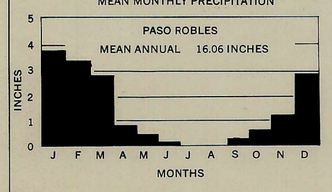
Escarpments

Selected Road Net

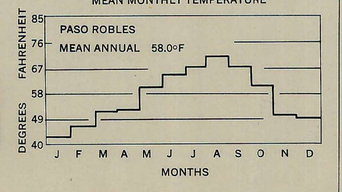
Paved roads

Unpaved roads

MEAN MONTHLY PRECIPITATION

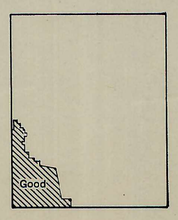


MEAN MONTHLY TEMPERATURE



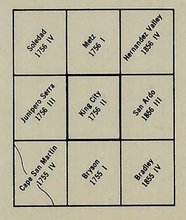
NOTE: Precipitation and temperature graphs shown for Paso Robles are used to indicate seasonal variation and are not indicative of the entire study area. Data on these subjects may be found in the general text for various stations in the area.

RELIABILITY DIAGRAM



APPROXIMATE MEAN DECLINATION 1952
FOR CENTER OF SHEET
ANNUAL MAGNETIC CHANGE 2' WESTERLY

INDEX TO ADJOINING SHEETS



CROSS-COUNTRY MOVEMENT LEGEND 1/

MAP UNIT	SOIL CONDITION		EXPLANATION
	Dry 2/	Wet 3/	
A	Passable	Passable	—No obstacles to passage or maneuvering or vehicles.
A_1	Passable	Difficult	—The soils when wet will support limited traffic but little or no maneuvering of vehicles.
A_2	Passable	Impractical	—The soils when wet probably will not support passage of more than one vehicle and will not support any maneuvering.
B	Difficult	Impractical	—Movement limited by brush density or by trunk spacing which necessitates extensive maneuvering.
C	Impractical	Impractical	—Trunk spacing or heavy brush denies all vehicular movement. Soils not evaluated.
	Impractical	Impractical	—Extremely rocky or broken topography denies all vehicular movement. Soils and vegetation not evaluated.
C	Impractical	Impractical	—Slope of 45% or greater. Soils and vegetation not evaluated.
	Saturated areas		—Areas that remain impractical for approximately 45 days following the wet season.

1/ Evaluation of material for this study is based on the maneuvering characteristics of the M-47 tank. Local reconnaissance is needed where detail greater than feasible on the scale of this map is required. This study is essentially concerned with off-road movement.
2/ During the dry period (generally mid-April to late November) soil moisture content is low.
3/ During the wet period (generally late November to mid-April) soils are near saturation.

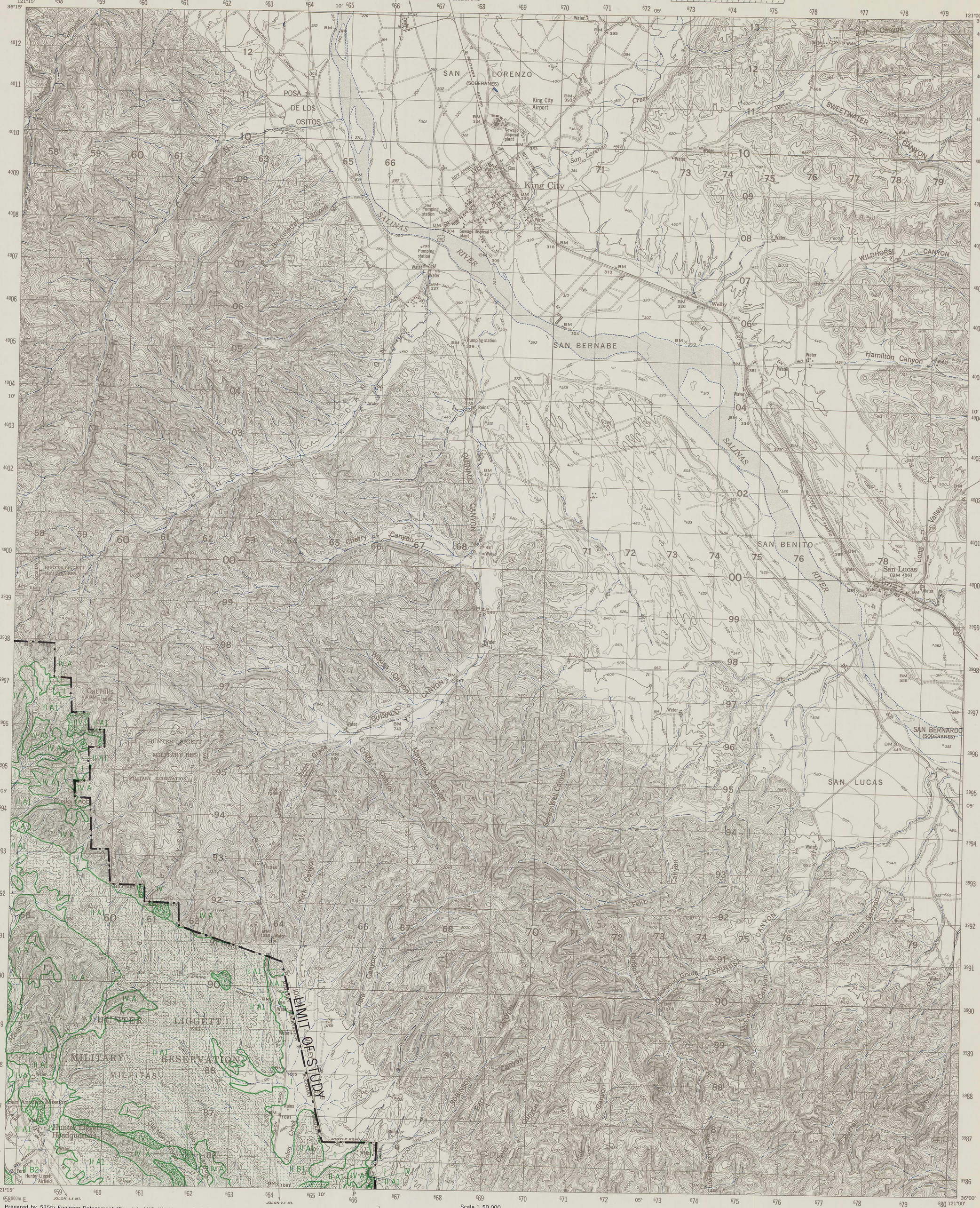
REFER TO THIS MAP AS: CROSS COUNTRY MOVEMENT KING CITY, CALIF.

CALIFORNIA 1:50,000

EDITION 3–AMS–CCM 1

VEGETATION

SHEET 1756 II
SERIES V795



Prepared by 535th Engineer Detachment (Terrain), AMS, Washington, D. C. Slope determined from California, 1:50,000, Series V795. Vegetation compiled from photo interpretation supplemented by field reconnaissance. Soils classified by laboratory tests. Area limits of soils from Department of Agriculture Soils Surveys, supplemented by photo interpretation and field reconnaissance. Soils trafficability classification from TM 3-240, supplement II, Waterways Experiment Station, Vicksburg, Mississippi.

Scale 1 50,000

1 0 1 2 3 Miles

1000 500 0 1000 2000 3000 4000 Meters

1000 500 0 1000 2000 3000 4000 Yards

CONTOUR INTERVAL 40 FEET
WITH SUPPLEMENTARY CONTOURS AT 20 FOOT INTERVALS

VERTICAL DATUM: SEA LEVEL DATUM OF 1929

TRANSVERSE MERCATOR PROJECTION

HORIZONTAL DATUM: 1927 NORTH AMERICAN DATUM

GRID LINES INDICATE 1,000 METER UNIVERSAL TRANSVERSE MERCATOR GRID, ZONE 10

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Stream, intermittent

Spring

Low dam

Gaging station

MEAN MONTHLY STREAM FLOW

SAN ANTONIO RIVER AT PLEYTO
MEAN ANNUAL 83.3 CFS

NACIMIENTO RIVER NEAR SAN MIGUEL
MEAN ANNUAL 272.4 CFS

HUNDRED CFS

J F M A M J J A S O N D

MONTHS

RELIABILITY DIAGRAM

Good

APPROXIMATE MEAN DECLINATION 1952
FOR CENTER OF SHEET
ANNUAL MAGNETIC CHANGE 2' WESTERLY

INDEX TO ADJOINING SHEETS

Soledad 1756 IV | Mid' 1756 I | Hernandez Valley 1856 IV
Jaspers Santa 1756 III | King City 1756 II | San Ardo 1856 III
Cape Sac Martin 1756 IV | Bryson 1756 I | Bradley 1856 IV

VEGETATION LEGEND

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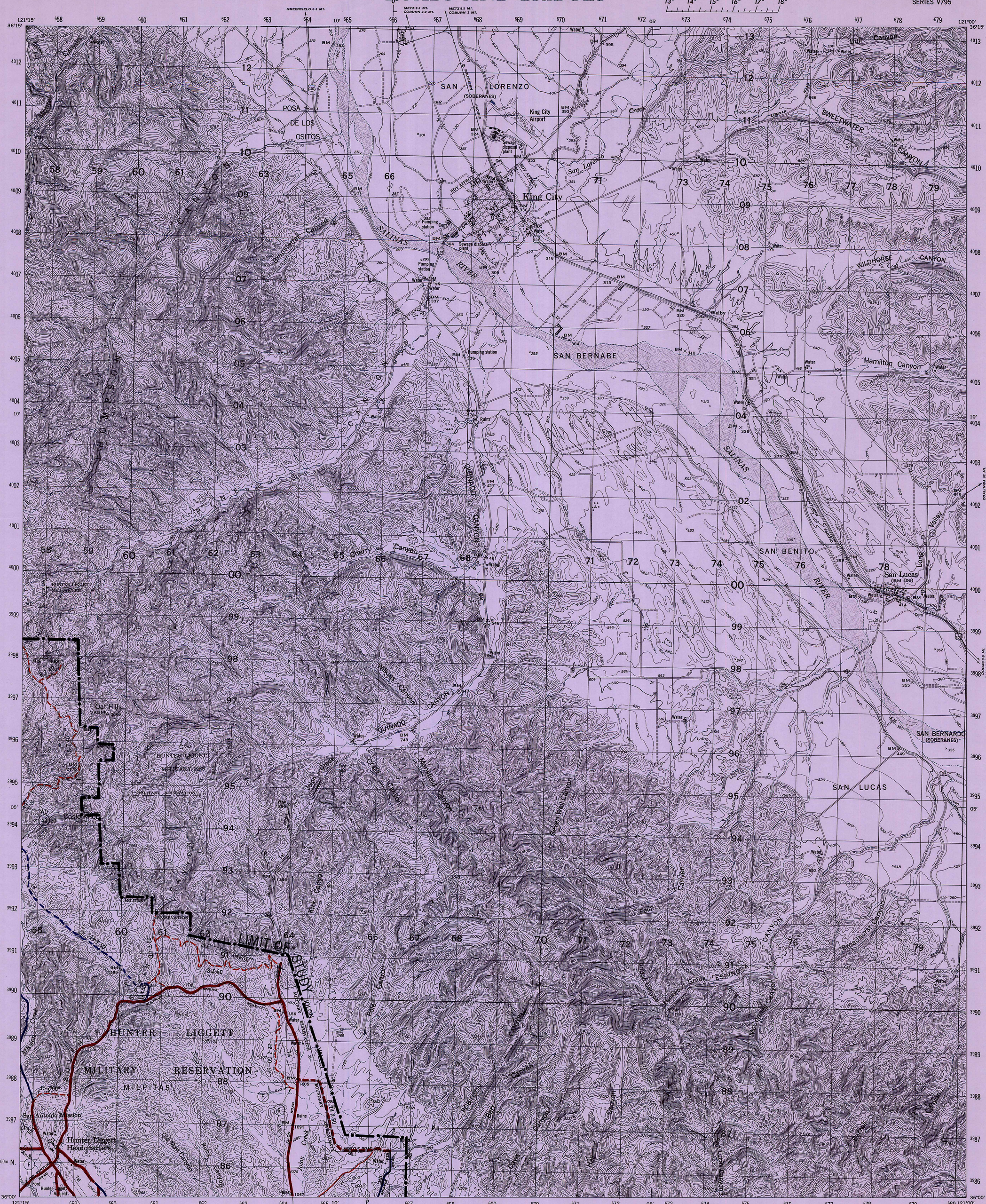
REFER TO THIS MAP AS: VEGETATION KING CITY, CALIF.

CALIFORNIA 1:50,000

EDITION 3–AMS–CCM 1

ROADS AND BRIDGES

SHEET 1756 II
SERIES V795



Prepared by 535th Engineer Detachment (Terrain), AMS, Washington, D. C. Slope determined from California, 1:50,000, Series V795. Vegetation compiled from photo interpretation supplemented by field reconnaissance. Soils classified by laboratory tests. Area limits of soils from Department of Agriculture Soils Surveys, supplemented by photo interpretation and field reconnaissance. Soils trafficability classification from TM 3-240, supplement II, Waterways Experiment Station, Vicksburg, Mississippi.

Scale 1 50,000

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CONTOUR INTERVAL 40 FEET
WITH SUPPLEMENTARY CONTOURS AT 20 FOOT INTERVALS
VERTICAL DATUM: SEA LEVEL DATUM OF 1929

TRANSVERSE MERCATOR PROJECTION
HORIZONTAL DATUM: 1927 NORTH AMERICAN DATUM

GRID LINES INDICATE 1,000 METER UNIVERSAL TRANSVERSE MERCATOR GRID, ZONE 10

BRIDGE INFORMATION

Clr. (C) T L W

C - One way capacity in tons
T - Type of construction (see bridge type symbols)
L - Total length in feet
W - Width of travelled way in feet
Clr. - Vertical clearance in feet and inches
* - An asterisk appearing in the bridge symbol has been used only when a route has an appreciably higher classification except for isolated restrictive bridges. When such a bridge occurs, the route has been given the higher classification.

- Bridge bypass easy
- Bridge bypass difficult
- Bridge bypass impossible

BRIDGE TYPE SYMBOLS

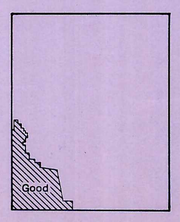
WO - Wood trestle
WOT - Wood truss
SG - Steel girder
SS - Steel stringer
ST - Steel truss
KA - Concrete arch
KG - Concrete girder
KS - Concrete slab

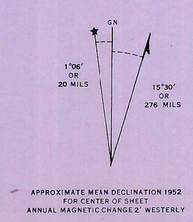
ROUTE CLASSIFICATION (EXAMPLE)

G — WO ∞ (30) 1100 — 18 — 15X50 — 15X30 — F

15 - Width of roadway in feet
X - All weather road
50 - Route capacity in tons
(G) - Locked gate
• - Point of change in classification of road
- Bridge bypass difficult
(F) - Location of ford
(K (F) - Concrete ford)
WO - Wood trestle
1100 - Total length in feet
18 - Width of travelled way in feet
∞ - Unlimited vertical clearance
(30) - Class 30 bridge

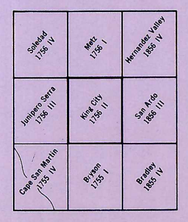
RELIABILITY DIAGRAM





APPROXIMATE MEAN DECLINATION 1952
FOR CENTER OF SHEET
ANNUAL MAGNETIC CHANGE 2' WESTERLY

INDEX TO ADJOINING SHEETS



ROAD CLASSIFICATION

HARD SURFACE HIGHWAY
(All weather road -X)
Class 50 or greater and 2 lanes
Less than class 50 and or single lane

IMPROVED ROAD
(Limited all weather road -Y)
Class 50 or greater and 2 lanes
Less than class 50 and or single lane

DIRT ROAD
(Fair weather road -Z)
Class 50 or greater and 2 lanes
Less than class 50 and or single lane
Not recommended for vehicles heavier than 3/4 ton (Four wheel drive necessary)
Proposed road

NOTES:
1. Routes having road widths of 18 feet or over are 2 lanes.
2. Unclassified roads, trails, and firebreaks should be used only after reconnaissance.

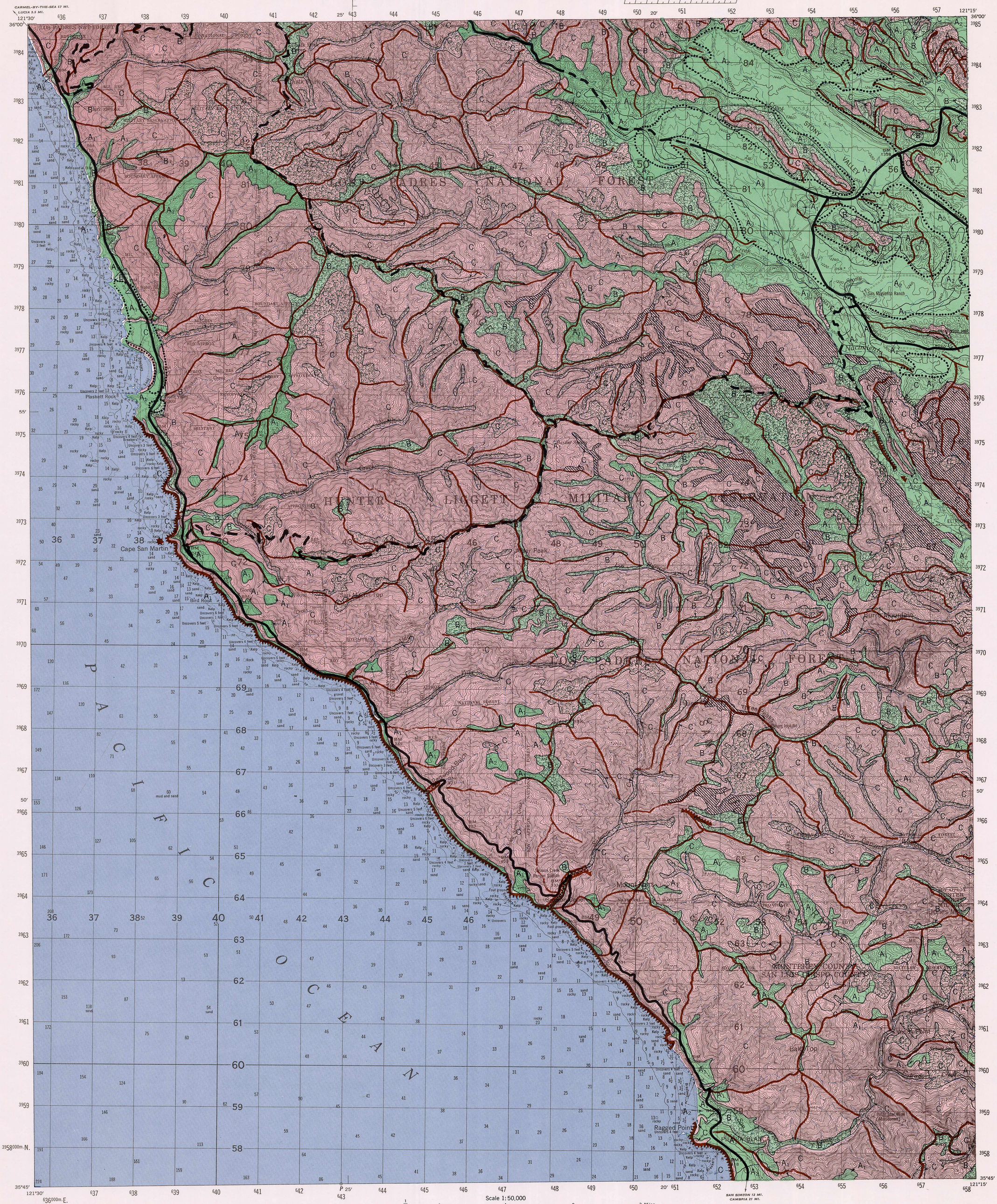
REFER TO THIS MAP AS: ROADS AND BRIDGES KING CITY, CALIF.

CALIFORNIA 1:50,000

EDITION 3—AMS—CCM 1

CROSS-COUNTRY MOVEMENT

SHEET 1755 IV
SERIES V795



Prepared by 535th Engineer Detachment (Terrain), AMS, Washington, D. C. Slope determined from California, 1:50,000, Series V795. Vegetation compiled from photo interpretation supplemented by field reconnaissance. Soils classified by laboratory tests. Area limits of soils from Department of Agriculture Soils Surveys, supplemented by photo interpretation and field reconnaissance. Soils trafficability classification from TM 3-240, supplement II, Waterways Experiment Station, Vicksburg, Mississippi.

Scale 1:50,000

1 0 1 2 3 Miles

1000 500 0 1000 2000 3000 4000 Meters

1000 500 0 1000 2000 3000 4000 Yards

CONTOUR INTERVAL 40 FEET
WITH SUPPLEMENTARY CONTOURS AT 20 FOOT INTERVALS

TRANSVERSE MERCATOR PROJECTION
HORIZONTAL DATUM: 1927 NORTH AMERICAN DATUM

GRID LINES INDICATE 1,000 METER UNIVERSAL TRANSVERSE MERCATOR GRID, ZONE 10

SUPPLEMENTAL LEGEND

Ridge lines

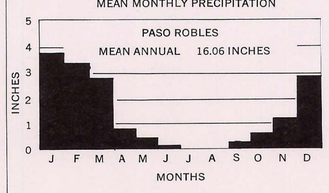
Escarpments

Selected Road Net

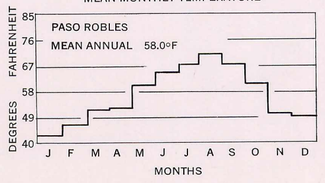
Paved roads

Unpaved roads

MEAN MONTHLY PRECIPITATION

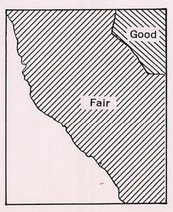


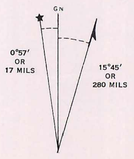
MEAN MONTHLY TEMPERATURE



NOTE: Precipitation and temperature graphs shown for Paso Robles are used to indicate seasonal variation and are not indicative of the entire study area. Data on these subjects may be found in the general text for various stations in the area.

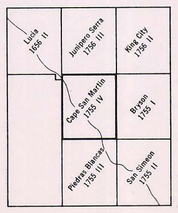
RELIABILITY DIAGRAM





APPROXIMATE MEAN DECLINATION 1952
FOR CENTER OF SHEET
ANNUAL MAGNETIC CHANGE 2′ WESTERLY

INDEX TO ADJOINING SHEETS



CROSS-COUNTRY MOVEMENT LEGEND 1/

MAP UNIT	SOIL CONDITION		EXPLANATION
	Dry 2/	Wet 3/	
A	Passable	Passable	—No obstacles to passage or maneuvering or vehicles.
A_1	Passable	Difficult	—The soils when wet will support limited traffic but little or no maneuvering of vehicles.
A_2	Passable	Impractical	—The soils when wet probably will not support passage of more than one vehicle and will not support any maneuvering.
B	Difficult	Impractical	—Movement limited by brush density or by trunk spacing which necessitates extensive maneuvering.
6	Impractical	Impractical	—Trunk spacing or heavy brush denies all vehicular movement. Soils not evaluated.
R	Impractical	Impractical	—Extremely rocky or broken topography denies all vehicular movement. Soils and vegetation not evaluated.
C	Impractical	Impractical	—Slope of 45% or greater. Soils and vegetation not evaluated.
	Saturated areas		—Areas that remain impractical for approximately 45 days following the wet season.

1/ Evaluation of material for this study is based on the maneuvering characteristics of the M-47 tank. Local reconnaissance is needed where detail greater than feasible on the scale of this map is required. This study is essentially concerned with off-road movement.
2/ During the dry period (generally mid-April to late November) soil moisture content is low.
3/ During the wet period (generally late November to mid-April) soils are near saturation.

REFER TO THIS MAP AS: CROSS COUNTRY MOVEMENT CAPE SAN MARTIN, CALIF.

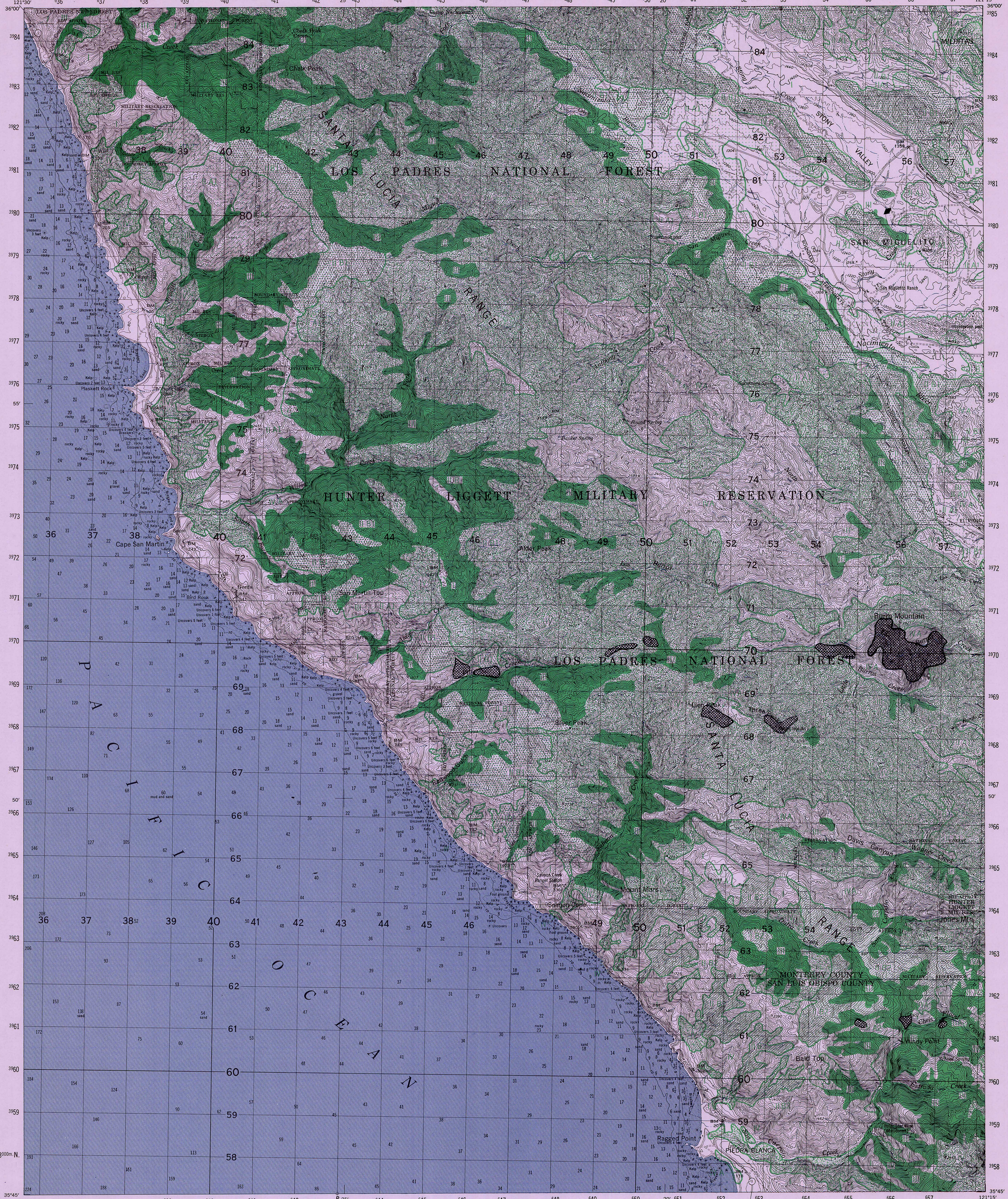
CALIFORNIA 1:50,000

EDITION 3–AMS–CCM 1

VEGETATION

SHEET 1755 IV
SERIES V795

CARMEL-BY-THE-SEA 57 MI.
LUCIA 3.5 MI.



Prepared by 535th Engineer Detachment (Terrain), AMS, Washington, D. C. Slope determined from California, 1:50,000, Series V795. Vegetation compiled from photo interpretation supplemented by field reconnaissance. Soils classified by laboratory tests. Area limits of soils from Department of Agriculture Soils Surveys, supplemented by photo interpretation and field reconnaissance. Soils trafficability classification from TM 3-240, supplement II, Waterways Experiment Station, Vicksburg, Mississippi.

Scale 1:50,000

1 0 1 2 3 Miles
1000 500 0 1000 2000 3000 4000 Meters
1000 500 0 1000 2000 3000 4000 Yards

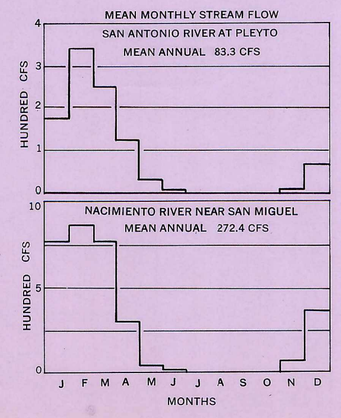
CONTOUR INTERVAL 40 FEET
WITH SUPPLEMENTARY CONTOURS AT 20 FOOT INTERVALS

TRANSVERSE MERCATOR PROJECTION
HORIZONTAL DATUM: 1927 NORTH AMERICAN DATUM

GRID LINES INDICATE 1,000 METER UNIVERSAL TRANSVERSE MERCATOR GRID, ZONE 10

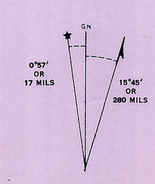
Rock outcrops
Stream, intermittent
Spring
Low dam
Gaging station

MEAN MONTHLY STREAM FLOW



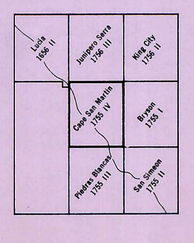
RELIABILITY DIAGRAM





APPROXIMATE MEAN DECLINATION 1952
FOR CENTER OF SHEET
ANNUAL MAGNETIC CHANGE 2' WESTERLY

INDEX TO ADJOINING SHEETS



VEGETATION LEGEND

UNIT	VEGETATION TYPE	DENSITY OF CANOPY 1/	GROUND VISIBILITY	EFFECT ON CROSS-COUNTRY MOVEMENT (Based on the characteristics of M-47 tank.)
1	Open areas: grassland, fields, sagebrush, etc.	0–10%	Unlimited by vegetation	Vegetation no restriction
IIA1	Woodland–grass 2/	10–40%	Good	Vegetation no restriction
IIA2	Discontinuous woods 2/	10–40%	Variable	May require by-passing a few stands; generally no restriction.
IIB1	Open woods 2/	40–70%	Good	May require by-passing dense stands; no restrictions on foot troops.
IIB2	Discontinuous woods 2/	40–70%	Variable	Will require by-passing dense stands; area as a whole no obstacle. Brush may hinder foot troops.
III	Dense woods	70–100%	Poor	Generally impractical for vehicles. Brush may hinder foot troops.
IV	Brush	Variable 3/	Variable 3/	Generally impractical for vehicles except on low slopes. Very difficult for foot troops.
IVA	Open brush	0–10%	Poor to unlimited	Generally no limitation to vehicles, locally may hinder foot troops.

1/ Considered 10' above ground. Estimated for period April–November when all trees are in leaf. During period November–April canopy density is reduced to less than ¼ of these values in woods east of Santa Lucia Range. There is no appreciable change in the mountains as most trees are non-deciduous.
2/ Trees in IIA1 and IIB1 are distributed evenly; in IIA2 and IIB2 they are grouped in dense clumps, commonly along streams or in gullies.
3/ On northeast slopes east of the crest of the Santa Lucia Range canopy density is high and ground visibility is poor; on southwest slopes visibility is fair and density of canopy is low. West of the range canopy density is low and visibility is fair. For 5-10 yrs. subsequent to severe brush fires ground visibility is good and vegetation is no limitation to movement.

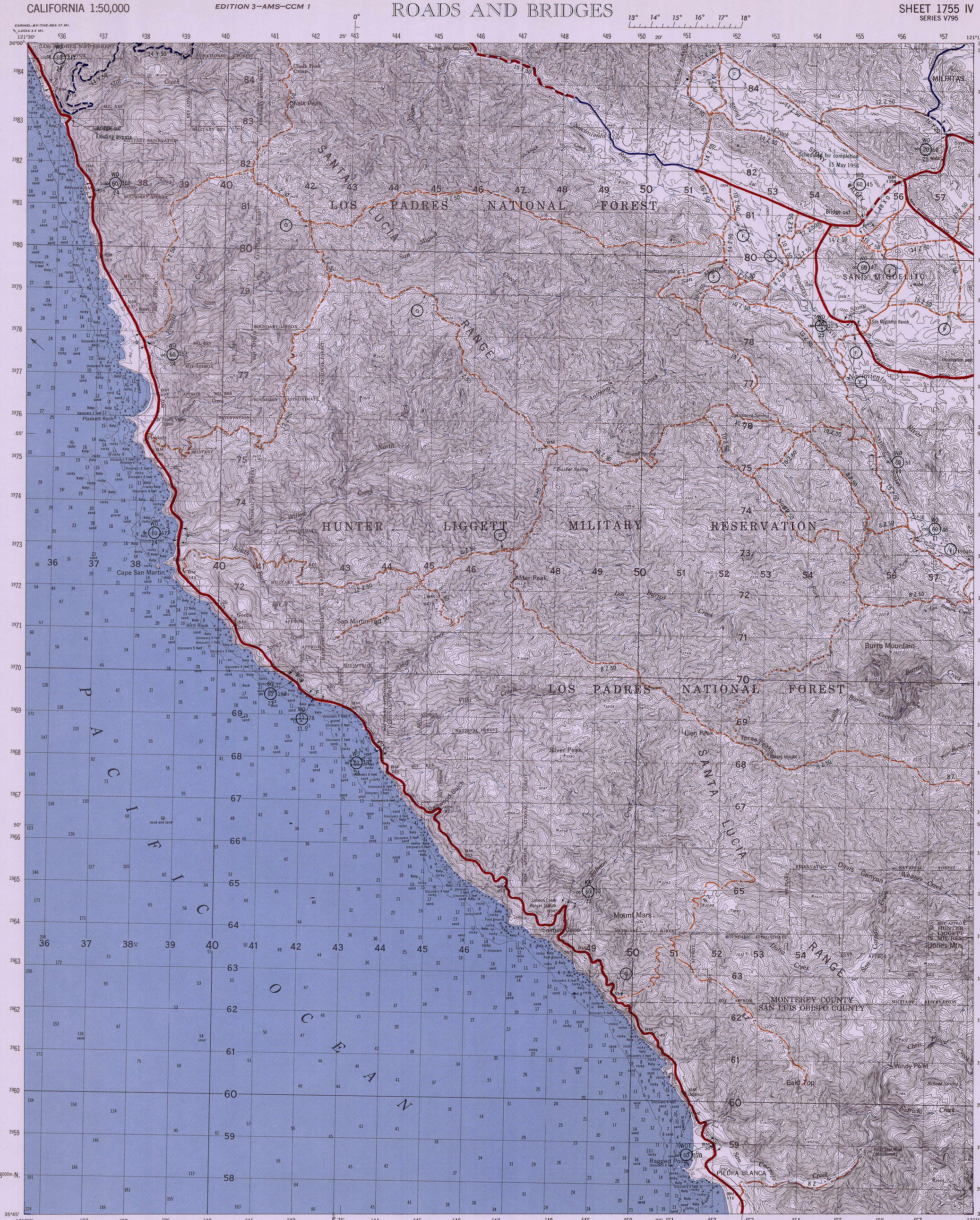
REFER TO THIS MAP AS: VEGETATION CAPE SAN MARTIN, CALIF.

CALIFORNIA 1:50,000

EDITION 3–AMS–CCM 1

ROADS AND BRIDGES

SHEET 1755 IV
SERIES V795



Prepared by 535th Engineer Detachment (Terrain), AMS, Washington, D. C. Slope determined from California, 1:50,000, Series V795. Vegetation compiled from photo interpretation supplemented by field reconnaissance. Soils classified by laboratory tests. Area limits of soils from Department of Agriculture Soils Surveys, supplemented by photo interpretation and field reconnaissance. Soils trafficability classification from TM 3-240, supplement II, Waterways Experiment Station, Vicksburg, Mississippi.

Scale 1:50,000

1 0 1 2 3 Miles

1000 500 0 1000 2000 3000 4000 Meters

1000 500 0 1000 2000 3000 4000 Yards

CONTOUR INTERVAL 40 FEET
WITH SUPPLEMENTARY CONTOURS AT 20 FOOT INTERVALS

TRANSVERSE MERCATOR PROJECTION
HORIZONTAL DATUM: 1927 NORTH AMERICAN DATUM

GRID LINES INDICATE 1,000 METER UNIVERSAL TRANSVERSE MERCATOR GRID, ZONE 10

BRIDGE INFORMATION

T
Clr. C L
W

C - One way capacity in tons
T - Type of construction (see bridge type symbols)
L - Total length in feet
W - Width of travelled way in feet
Clr. - Vertical clearance in feet and inches
* - An asterisk appearing in the bridge symbol has been used only when a route has an appreciably higher classification except for isolated restrictive bridges. When such a bridge occurs, the route has been given the higher classification.

- Bridge bypass easy
- Bridge bypass difficult
- Bridge bypass impossible

BRIDGE TYPE SYMBOLS

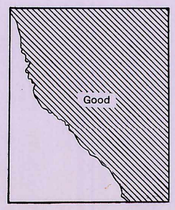
WO - Wood trestle
WOT - Wood truss
SG - Steel girder
SS - Steel stringer
ST - Steel truss
KA - Concrete arch
KG - Concrete girder
KS - Concrete slab

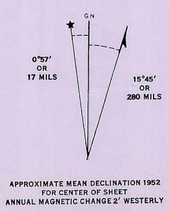
ROUTE CLASSIFICATION (EXAMPLE)

WO
G ∞ 30 1100
18
15X50 15X30
L F

15 - Width of roadway in feet
X - All weather road
50 - Route capacity in tons
G - Locked gate
• - Point of change in classification of road
- Bridge bypass difficult
F - Location of ford
K
(F) - Concrete ford)
WO - Wood trestle
1100 - Total length in feet
18 - Width of travelled way in feet
∞ - Unlimited vertical clearance
30 - Class 30 bridge

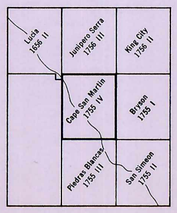
RELIABILITY DIAGRAM





APPROXIMATE MEAN DECLINATION 1952
FOR CENTER OF SHEET
ANNUAL MAGNETIC CHANGE 2′ WESTERLY

INDEX TO ADJOINING SHEETS



ROAD CLASSIFICATION

HARD SURFACE HIGHWAY
(All weather road -X)
Class 50 or greater and 2 lanes
Less than class 50 and or single lane

IMPROVED ROAD
(Limited all weather road -Y)
Class 50 or greater and 2 lanes
Less than class 50 and or single lane

DIRT ROAD
(Fair weather road -Z)
Class 50 or greater and 2 lanes
Less than class 50 and or single lane
Not recommended for vehicles heavier than 3/4 ton (Four wheel drive necessary)
Proposed road

NOTES:
1. Routes having road widths of 18 feet or over are 2 lanes.
2. Unclassified roads, trails, and firebreaks should be used only after reconnaissance.

REFER TO THIS MAP AS: ROADS AND BRIDGES CAPE SAN MARTIN, CALIF.

CALIFORNIA 1:50,000

EDITION 4–AMS–CCM 1

CROSS-COUNTRY MOVEMENT

SHEET 1755 I
SERIES V795

HUNTER LIGGETT HEADQUARTERS 0.9 MI.

KING CITY 17 MI.

2.9 MI. TO JOLON ROAD

5.1 MI. TO SAN MIGUELITO LOOP ROAD

10 MI. TO U.S. 101 BRADLEY 12 MI.

PLEYTO 5.4 MI.

BEE ROCK 3.3 MI.

LIMIT OF STUDY

HUNTER LIGGETT MILITARY RESERVATION

MONTEREY COUNTY
SAN LUIS OBISPO COUNTY

Prepared by 535th Engineer Detachment (Terrain), AMS, Washington, D. C. Slope determined from California, 1:50,000, Series V795. Vegetation compiled from photo interpretation supplemented by field reconnaissance. Soils classified by laboratory tests. Area limits of soils from Department of Agriculture Soils Surveys, supplemented by photo interpretation and field reconnaissance. Soils trafficability classification from TM 3-240, supplement II, Waterways Experiment Station, Vicksburg, Mississippi.

Scale 1 50,000

1 0 1 2 3 Miles

1000 500 0 1000 2000 3000 4000 Meters

1000 500 0 1000 2000 3000 4000 Yards

CONTOUR INTERVAL 40 FEET
WITH SUPPLEMENTARY CONTOURS AT 20 FOOT INTERVALS

TRANSVERSE MERCATOR PROJECTION
HORIZONTAL DATUM: 1927 NORTH AMERICAN DATUM

GRID LINES INDICATE 1,000 METER UNIVERSAL TRANSVERSE MERCATOR GRID, ZONE 10

SUPPLEMENTAL LEGEND

- Ridge lines
- Escarpments
- Selected Road Net
- Paved roads
- Unpaved roads

MEAN MONTHLY PRECIPITATION

PASO ROBLES
MEAN ANNUAL 16.06 INCHES

INCHES: 0 1 2 3 4 5

J F M A M J J A S O N D

MONTHS

MEAN MONTHLY TEMPERATURE

PASO ROBLES
MEAN ANNUAL 58.0°F

FAHRENHEIT DEGREES: 40 49 58 67 76 85

J F M A M J J A S O N D

MONTHS

NOTE: Precipitation and temperature graphs shown for Paso Robles are used to indicate seasonal variation and are not indicative of the entire study area. Data on these subjects may be found in the general text for various stations in the area.

RELIABILITY DIAGRAM

Good
Fair

GN

1°06' OR 20 MILS

15°30' OR 276 MILS

APPROXIMATE MEAN DECLINATION 1952
FOR CENTER OF SHEET
ANNUAL MAGNETIC CHANGE 2' WESTERLY

INDEX TO ADJOINING SHEETS

Lompoc Sana 1756 III
King City 1756 II
San Ardo 1856 III
Cape San Martin 1755 IV
Bryson 1755 I
Bradley 1855 IV
Piedras Blancas 1755 III
San Simeon 1755 II
Adelaida 1855 III

CROSS-COUNTRY MOVEMENT LEGEND 1/

MAP UNIT	SOIL CONDITION: Dry 2/	SOIL CONDITION: Wet 3/	EXPLANATION
A	Passable	Passable	—No obstacles to passage or maneuvering or vehicles.
A_1	Passable	Difficult	—The soils when wet will support limited traffic but little or no maneuvering of vehicles.
A_2	Passable	Impractical	—The soils when wet probably will not support passage of more than one vehicle and will not support any maneuvering.
B	Difficult	Impractical	—Movement limited by brush density or by trunk spacing which necessitates extensive maneuvering.
C	Impractical	Impractical	—Trunk spacing or heavy brush denies all vehicular movement. Soils not evaluated.
R	Impractical	Impractical	—Extremely rocky or broken topography denies all vehicular movement. Soils and vegetation not evaluated.
C	Impractical	Impractical	—Slope of 45% or greater. Soils and vegetation not evaluated.
	Saturated areas		—Areas that remain impractical for approximately 45 days following the wet season.

1/ Evaluation of material for this study is based on the maneuvering characteristics of the M-47 tank. Local reconnaissance is needed where detail greater than feasible on the scale of this map is required. This study is essentially concerned with off-road movement.
2/ During the dry period (generally mid-April to late November) soil moisture content is low.
3/ During the wet period (generally late November to mid-April) soils are near saturation.

REFER TO THIS MAP AS: CROSS COUNTRY MOVEMENT BRYSON, CALIF.

CALIFORNIA 1:50,000

EDITION 4–AMS–CCM 1

VEGETATION

SHEET 1755 I
SERIES V795

LIMIT OF STUDY

HUNTER LIGGETT MILITARY RESERVATION

SAN MIGUELITO

LOS OJITOS

MILPITAS

EL PINAL

LOS PADRES NATIONAL FOREST

PIEDRA BLANCA

MONTEREY COUNTY
SAN LUIS OBISPO COUNTY

Prepared by 535th Engineer Detachment (Terrain), AMS, Washington, D. C. Slope determined from California, 1:50,000, Series V795. Vegetation compiled from photo interpretation supplemented by field reconnaissance. Soils classified by laboratory tests. Area limits of soils from Department of Agriculture Soils Surveys, supplemented by photo interpretation and field reconnaissance. Soils trafficability classification from TM 3-240, supplement II, Waterways Experiment Station, Vicksburg, Mississippi.

Scale 1 50,000

1 0 1 2 3 Miles

1000 500 0 1000 2000 3000 4000 Meters

1000 500 0 1000 2000 3000 4000 Yards

CONTOUR INTERVAL 40 FEET
WITH SUPPLEMENTARY CONTOURS AT 20 FOOT INTERVALS

TRANSVERSE MERCATOR PROJECTION
HORIZONTAL DATUM: 1927 NORTH AMERICAN DATUM

GRID LINES INDICATE 1,000 METER UNIVERSAL TRANSVERSE MERCATOR GRID, ZONE 10

Rock outcrops

Stream, intermittent

Spring

Low dam

Gaging station

MEAN MONTHLY STREAM FLOW

SAN ANTONIO RIVER AT PLEYTO
MEAN ANNUAL 83.3 CFS

HUNDRED CFS

NACIMIENTO RIVER NEAR SAN MIGUEL
MEAN ANNUAL 272.4 CFS

HUNDRED CFS

J F M A M J J A S O N D
MONTHS

RELIABILITY DIAGRAM

Good

Fair

APPROXIMATE MEAN DECLINATION 1952
FOR CENTER OF SHEET
ANNUAL MAGNETIC CHANGE 2' WESTERLY

INDEX TO ADJOINING SHEETS

Junipero Serra 1755 III
King City 1756 II
San Ardo 1855 III
Cape San Martin 1755 IV
Bryson 1755 I
Bradley 1855 IV
Pleyto Blanco 1755 III
San Simeon 1755 II
Adelaida 1855 III

VEGETATION LEGEND

UNIT	VEGETATION TYPE	DENSITY OF CANOPY 1/	GROUND VISIBILITY	EFFECT ON CROSS-COUNTRY MOVEMENT (Based on the characteristics of M-47 tank.)
1	Open areas: grassland, fields, sagebrush, etc.	0–10%	Unlimited by vegetation	Vegetation no restriction
IIA1	Woodland–grass 2/	10–40%	Good	Vegetation no restriction
IIA2	Discontinuous woods 2/	10–40%	Variable	May require by-passing a few stands; generally no restriction.
IIB1	Open woods 2/	40–70%	Good	May require by-passing dense stands; no restrictions on foot troops.
IIB2	Discontinuous woods 2/	40–70%	Variable	Will require by-passing dense stands; area as a whole no obstacle. Brush may hinder foot troops.
III	Dense woods	70–100%	Poor	Generally impractical for vehicles. Brush may hinder foot troops.
IV	Brush	Variable 3/	Variable 3/	Generally impractical for vehicles except on low slopes. Very difficult for foot troops.
IVA	Open brush	0–10%	Poor to unlimited	Generally no limitation to vehicles, locally may hinder foot troops.

1/ Considered 10' above ground. Estimated for period April–November when all trees are in leaf. During period November–April canopy density is reduced to less than ¼ of these values in woods east of Santa Lucia Range. There is no appreciable change in the mountains as most trees are non-deciduous.

2/ Trees in IIA1 and IIB1 are distributed evenly; in IIA2 and IIB2 they are grouped in dense clumps, commonly along streams or in gullies.

3/ On northeast slopes east of the crest of the Santa Lucia Range canopy density is high and ground visibility is poor; on southwest slopes visibility is fair and density of canopy is low. West of the range canopy density is low and visibility is fair. For 5-10 yrs. subsequent to severe brush fires ground visibility is good and vegetation is no limitation to movement.

REFER TO THIS MAP AS: VEGETATION BRYSON, CALIF.

CALIFORNIA 1:50,000

EDITION 4-AMS-CCM 1

ROADS AND BRIDGES

SHEET 1755 I
SERIES V795

HUNTER LIGGETT HEADQUARTERS 0.9 MI.

KING CITY 17 MI.

2.9 MI. TO JOLON ROAD

121°15′ — 121°00′ — 36°00′

HUNTER LIGGETT MILITARY RESERVATION

MILITARY RESERVATION

LIMIT OF STUDY

SAN MIGUELITO LOOP ROAD

5.1 MI. TO SAN MIGUELITO LOOP ROAD

10 MI. TO U.S. 101 BRADLEY 12 MI.

PLEYTO 0.4 MI.

BEE ROCK 4.9 MI.

MONTEREY COUNTY
SAN LUIS OBISPO COUNTY

35°45′ — 121°15′

659000m.E.

Scale 1 50,000

1 0 1 2 3 Miles

1000 500 0 1000 2000 3000 4000 Meters

1000 500 0 1000 2000 3000 4000 Yards

CONTOUR INTERVAL 40 FEET
WITH SUPPLEMENTARY CONTOURS AT 20 FOOT INTERVALS

TRANSVERSE MERCATOR PROJECTION
HORIZONTAL DATUM: 1927 NORTH AMERICAN DATUM

GRID LINES INDICATE 1,000 METER UNIVERSAL TRANSVERSE MERCATOR GRID, ZONE 10

Prepared by 535th Engineer Detachment (Terrain), AMS, Washington, D. C. Slope determined from California, 1:50,000, Series V795. Vegetation compiled from photo interpretation supplemented by field reconnaissance. Soils classified by laboratory tests. Area limits of soils from Department of Agriculture Soils Surveys, supplemented by photo interpretation and field reconnaissance. Soils trafficability classification from TM 3-240, supplement II, Waterways Experiment Station, Vicksburg, Mississippi.

BRIDGE INFORMATION

T
Clr. C L
W

C - One way capacity in tons
T - Type of construction (see bridge type symbols)
L - Total length in feet
W - Width of travelled way in feet
Clr. - Vertical clearance in feet and inches
✳ - An asterisk appearing in the bridge symbol has been used only when a route has an appreciably higher classification except for isolated restrictive bridges. When such a bridge occurs, the route has been given the higher classification.

- Bridge bypass easy
- Bridge bypass difficult
- Bridge bypass impossible

BRIDGE TYPE SYMBOLS

WO - Wood trestle
WOT - Wood truss
SG - Steel girder
SS - Steel stringer
ST - Steel truss
KA - Concrete arch
KG - Concrete girder
KS - Concrete slab

ROUTE CLASSIFICATION (EXAMPLE)

G — WO ∞ 30 1100 — 18 — 15X50 — 15X30 — F

15 - Width of roadway in feet
X - All weather road
50 - Route capacity in tons
(G) - Locked gate
• - Point of change in classification of road
- Bridge bypass difficult
(F) - Location of ford
(K F) - Concrete ford)
WO - Wood trestle
1100 - Total length in feet
18 - Width of travelled way in feet
∞ - Unlimited vertical clearance
(30) - Class 30 bridge

RELIABILITY DIAGRAM

Good MAR 56

INDEX TO ADJOINING SHEETS

Junipero Serra 1756 III	King City 1756 II	San Ardo 1656 III
Cape San Martin 1755 IV	Bryson 1755 I	Bradley 1655 IV
Pedrera Blanca 1755 III	San Simeon 1755 II	Adelaida 1655 III

GN
16°06′ OR 20 MILS
15°30′ OR 276 MILS

APPROXIMATE MEAN DECLINATION 1952 FOR CENTER OF SHEET
ANNUAL MAGNETIC CHANGE 2′ WESTERLY

ROAD CLASSIFICATION

HARD SURFACE HIGHWAY
(All weather road -X)
Class 50 or greater and 2 lanes
Less than class 50 and or single lane

IMPROVED ROAD
(Limited all weather road -Y)
Class 50 or greater and 2 lanes
Less than class 50 and or single lane

DIRT ROAD
(Fair weather road -Z)
Class 50 or greater and 2 lanes
Less than class 50 and or single lane
Not recommended for vehicles heavier than 3/4 ton (Four wheel drive necessary)
Proposed road

NOTES:
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2. Unclassified roads, trails, and firebreaks should be used only after reconnaissance.

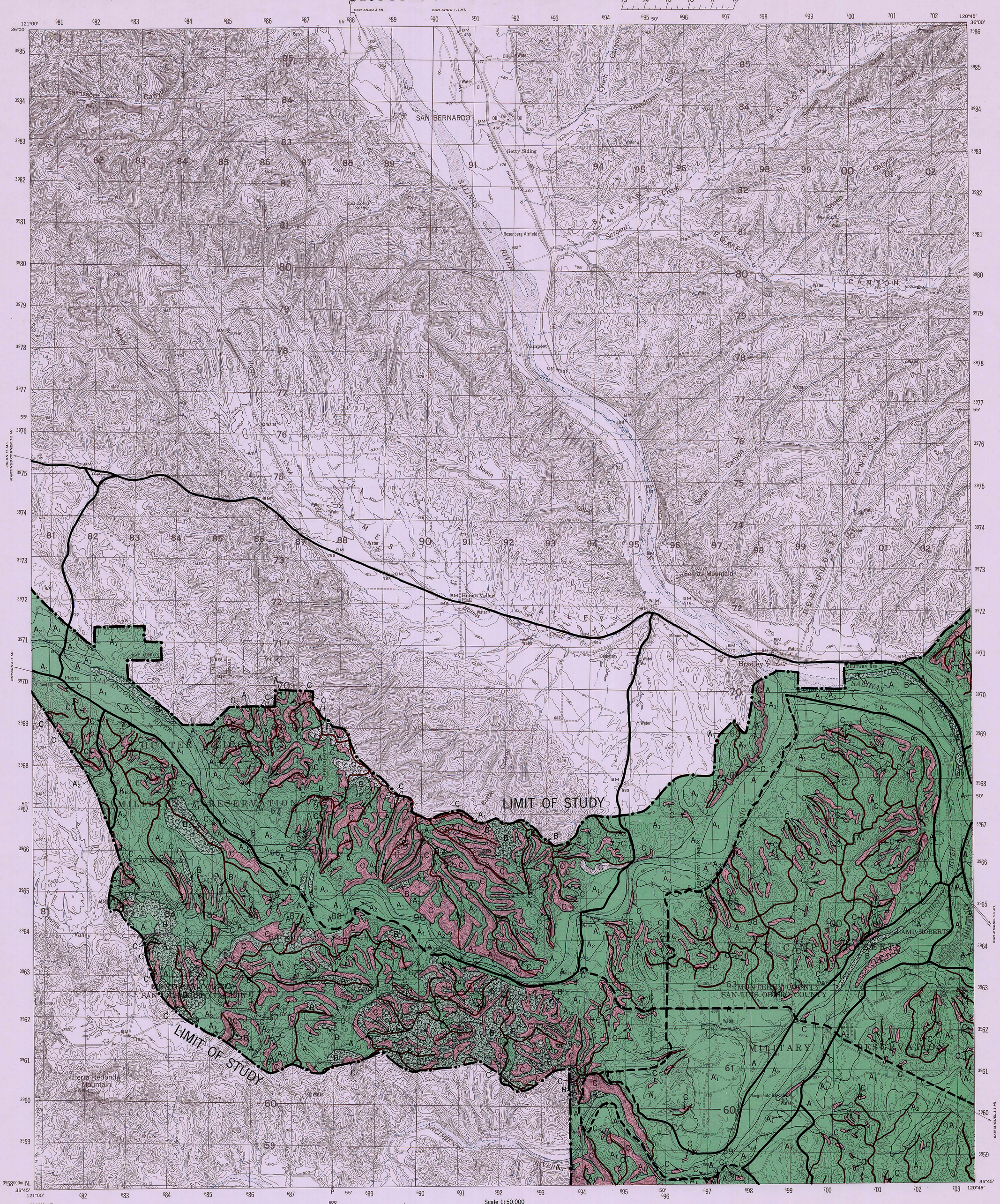
REFER TO THIS MAP AS: ROADS AND BRIDGES BRYSON, CALIF.

CALIFORNIA 1:50,000

EDITION 5–AMS–CCM 1

CROSS-COUNTRY MOVEMENT

SHEET 1855 IV
SERIES V795



Prepared by 535th Engineer Detachment (Terrain), AMS, Washington, D. C. Slope determined from California, 1:50,000, Series V795. Vegetation compiled from photo interpretation supplemented by field reconnaissance. Soils classified by laboratory tests. Area limits of soils from Department of Agriculture Soils Surveys, supplemented by photo interpretation and field reconnaissance. Soils trafficability classification from TM 3-240, supplement II, Waterways Experiment Station, Vicksburg, Mississippi.

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CONTOUR INTERVAL 40 FEET
WITH SUPPLEMENTARY CONTOURS AT 20 FOOT INTERVALS
VERTICAL DATUM: SEA LEVEL DATUM OF 1929

TRANSVERSE MERCATOR PROJECTION
HORIZONTAL DATUM: 1927 NORTH AMERICAN DATUM

GRID LINES INDICATE 1,000 METER UNIVERSAL TRANSVERSE MERCATOR GRID, ZONE 10

SUPPLEMENTAL LEGEND

Ridge lines

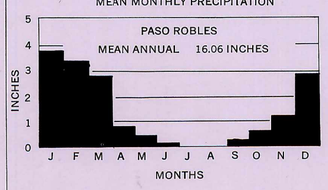
Escarpments

Selected Road Net

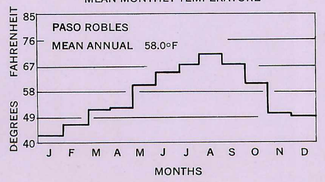
Paved roads

Unpaved roads

MEAN MONTHLY PRECIPITATION

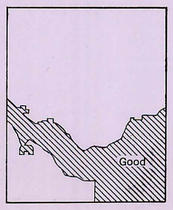


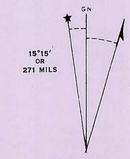
MEAN MONTHLY TEMPERATURE



NOTE: Precipitation and temperature graphs shown for Paso Robles are used to indicate seasonal variation and are not indicative of the entire study area. Data on these subjects may be found in the general text for various stations in the area.

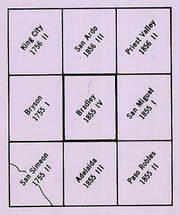
RELIABILITY DIAGRAM





APPROXIMATE MEAN DECLINATION 1952
FOR CENTER OF SHEET
ANNUAL MAGNETIC CHANGE 2' WESTERLY

INDEX TO ADJOINING SHEETS



CROSS-COUNTRY MOVEMENT LEGEND 1/

MAP UNIT	SOIL CONDITION		EXPLANATION
	Dry 2/	Wet 3/	
A	Passable	Passable	—No obstacles to passage or maneuvering or vehicles.
A_1	Passable	Difficult	—The soils when wet will support limited traffic but little or no maneuvering of vehicles.
A_2	Passable	Impractical	—The soils when wet probably will not support passage of more than one vehicle and will not support any maneuvering.
B	Difficult	Impractical	—Movement limited by brush density or by trunk spacing which necessitates extensive maneuvering.
C	Impractical	Impractical	—Trunk spacing or heavy brush denies all vehicular movement. Soils not evaluated.
S	Impractical	Impractical	—Extremely rocky or broken topography denies all vehicular movement. Soils and vegetation not evaluated.
C	Impractical	Impractical	—Slope of 45% or greater. Soils and vegetation not evaluated.
	Saturated areas		—Areas that remain impractical for approximately 45 days following the wet season.

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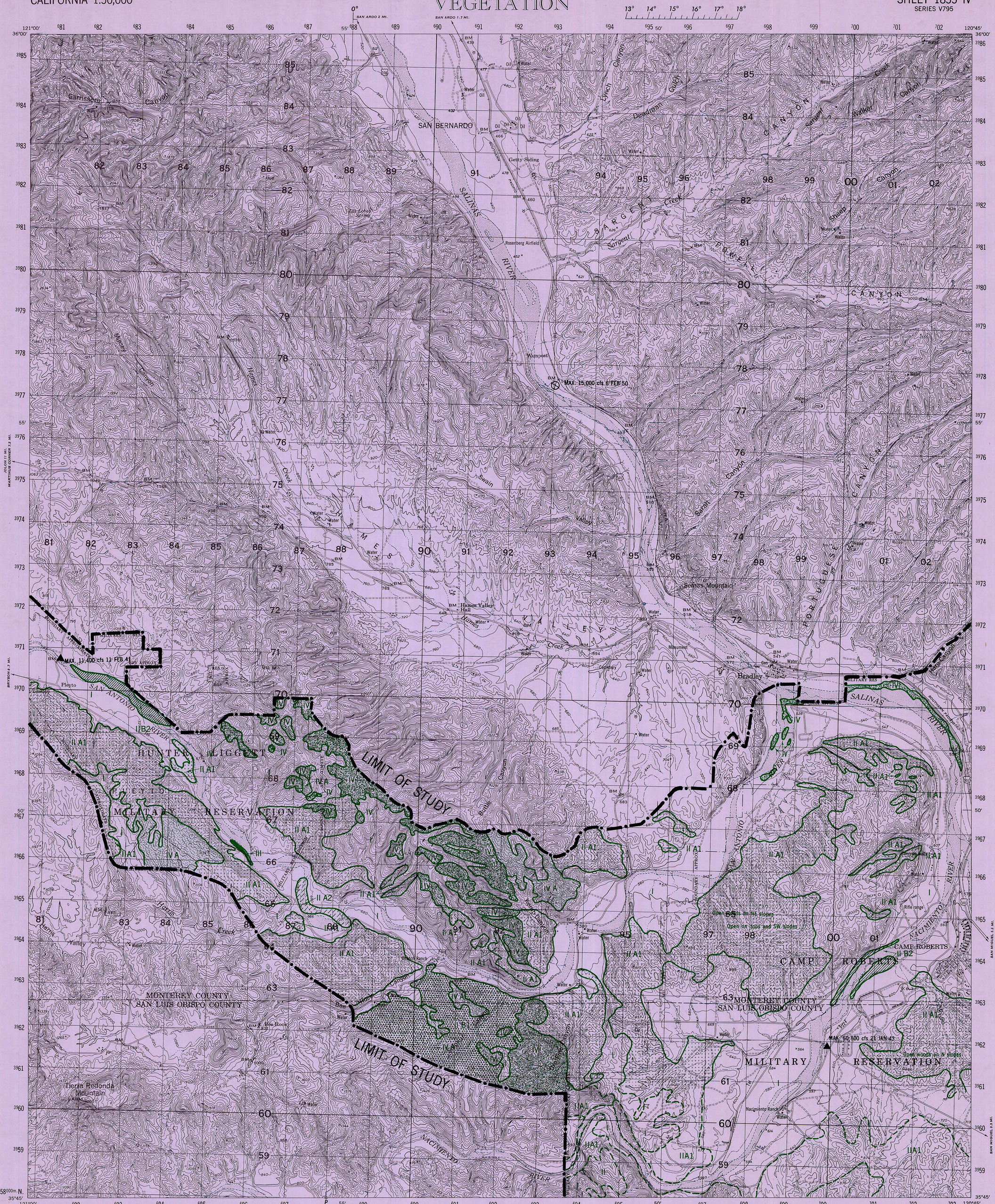
REFER TO THIS MAP AS: CROSS COUNTRY MOVEMENT BRADLEY, CALIF.

CALIFORNIA 1:50,000

EDITION 5–AMS–CCM 1

VEGETATION

SHEET 1855 IV
SERIES V795



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Scale 1:50,000

1 0 1 2 3 Miles

1000 500 0 1000 2000 3000 4000 Meters

1000 500 0 1000 2000 3000 4000 Yards

CONTOUR INTERVAL 40 FEET
WITH SUPPLEMENTARY CONTOURS AT 20 FOOT INTERVALS
VERTICAL DATUM: SEA LEVEL DATUM OF 1929

TRANSVERSE MERCATOR PROJECTION
HORIZONTAL DATUM: 1927 NORTH AMERICAN DATUM

GRID LINES INDICATE 1,000 METER UNIVERSAL TRANSVERSE MERCATOR GRID, ZONE 10

Rock outcrops

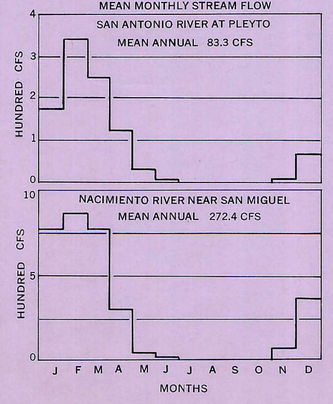
Stream, intermittent

Spring

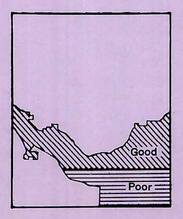
Low dam

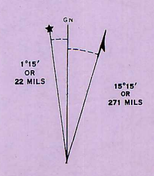
Gaging station

MEAN MONTHLY STREAM FLOW



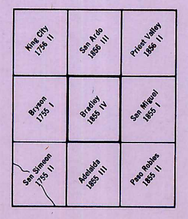
RELIABILITY DIAGRAM





APPROXIMATE MEAN DECLINATION 1952
FOR CENTER OF SHEET
ANNUAL MAGNETIC CHANGE 2' WESTERLY

INDEX TO ADJOINING SHEETS



VEGETATION LEGEND

UNIT	VEGETATION TYPE	DENSITY OF CANOPY 1/	GROUND VISIBILITY	EFFECT ON CROSS-COUNTRY MOVEMENT (Based on the characteristics of M-47 tank.)
1	Open areas: grassland, fields, sagebrush, etc.	0–10%	Unlimited by vegetation	Vegetation no restriction
IIA1	Woodland-grass 2/	10–40%	Good	Vegetation no restriction
IIA2	Discontinuous woods 2/	10–40%	Variable	May require by-passing a few stands; generally no restriction.
IIB1	Open woods 2/	40–70%	Good	May require by-passing dense stands; no restrictions on foot troops.
IIB2	Discontinuous woods 2/	40–70%	Variable	Will require by-passing dense stands; area as a whole no obstacle. Brush may hinder foot troops.
III	Dense woods	70–100%	Poor	Generally impractical for vehicles. Brush may hinder foot troops.
IV	Brush	Variable 3/	Variable 3/	Generally impractical for vehicles except on low slopes. Very difficult for foot troops.
IVA	Open brush	0–10%	Poor to unlimited	Generally no limitation to vehicles, locally may hinder foot troops.

1/ Considered 10' above ground. Estimated for period April–November when all trees are in leaf. During period November–April canopy density is reduced to less than ¼ of these values in woods east of Santa Lucia Range. There is no appreciable change in the mountains as most trees are non-deciduous.

2/ Trees in IIA1 and IIB1 are distributed evenly; in IIA2 and IIB2 they are grouped in dense clumps, commonly along streams or in gullies.

3/ On northeast slopes east of the crest of the Santa Lucia Range canopy density is high and ground visibility is poor; on southwest slopes visibility is fair and density of canopy is low. West of the range canopy density is low and visibility is fair. For 5-10 yrs. subsequent to severe brush fires ground visibility is good and vegetation is no limitation to movement.

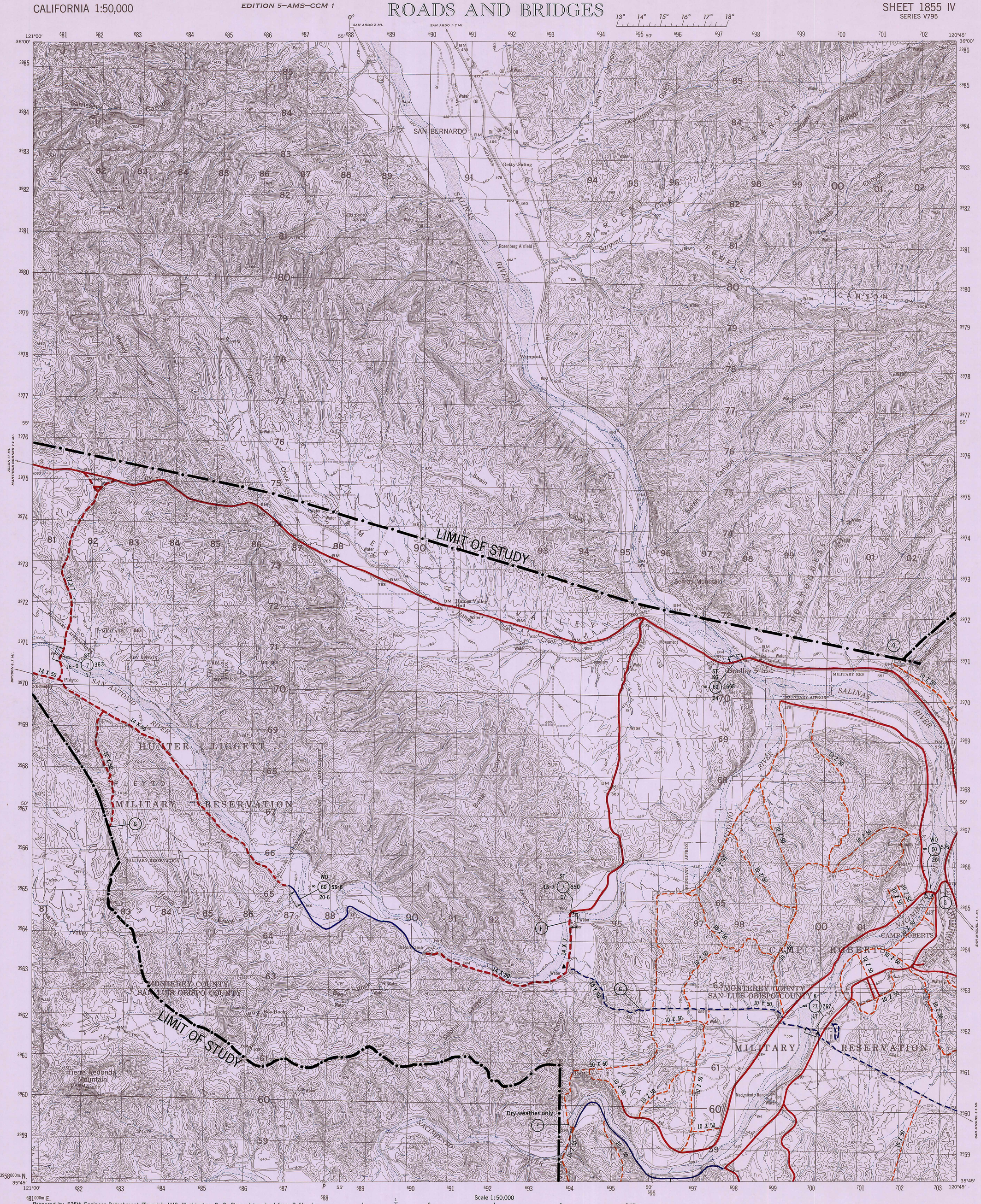
REFER TO THIS MAP AS: VEGETATION BRADLEY, CALIF.

CALIFORNIA 1:50,000

EDITION 5—AMS—CCM 1

ROADS AND BRIDGES

SHEET 1855 IV
SERIES V795



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CONTOUR INTERVAL 40 FEET
WITH SUPPLEMENTARY CONTOURS AT 20 FOOT INTERVALS
VERTICAL DATUM: SEA LEVEL DATUM OF 1929

TRANSVERSE MERCATOR PROJECTION
HORIZONTAL DATUM: 1927 NORTH AMERICAN DATUM

GRID LINES INDICATE 1,000 METER UNIVERSAL TRANSVERSE MERCATOR GRID, ZONE 10

BRIDGE INFORMATION

T
Clr. C L
W

C - One way capacity in tons
T - Type of construction (see bridge type symbols)
L - Total length in feet
W - Width of travelled way in feet
Clr. - Vertical clearance in feet and inches
* - An asterisk appearing in the bridge symbol has been used only when a route has an appreciably higher classification except for isolated restrictive bridges. When such a bridge occurs, the route has been given the higher classification.

- Bridge bypass easy
- Bridge bypass difficult
- Bridge bypass impossible

BRIDGE TYPE SYMBOLS

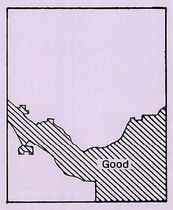
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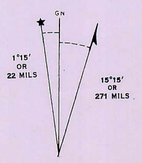
ROUTE CLASSIFICATION (EXAMPLE)

G — WO — ∞ 30 1100 — 18 — 15X50 — 15X30 — F

15 - Width of roadway in feet
X - All weather road
50 - Route capacity in tons
G - Locked gate
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F - Location of ford
K (F) - Concrete ford)
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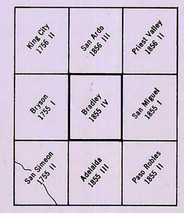
RELIABILITY DIAGRAM





APPROXIMATE MEAN DECLINATION 1952
FOR CENTER OF SHEET
ANNUAL MAGNETIC CHANGE 2' WESTERLY

INDEX TO ADJOINING SHEETS



ROAD CLASSIFICATION

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Less than class 50 and or single lane

IMPROVED ROAD
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(Fair weather road -Z)
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Not recommended for vehicles heavier than 3/4 ton (Four wheel drive necessary)
Proposed road

NOTES:
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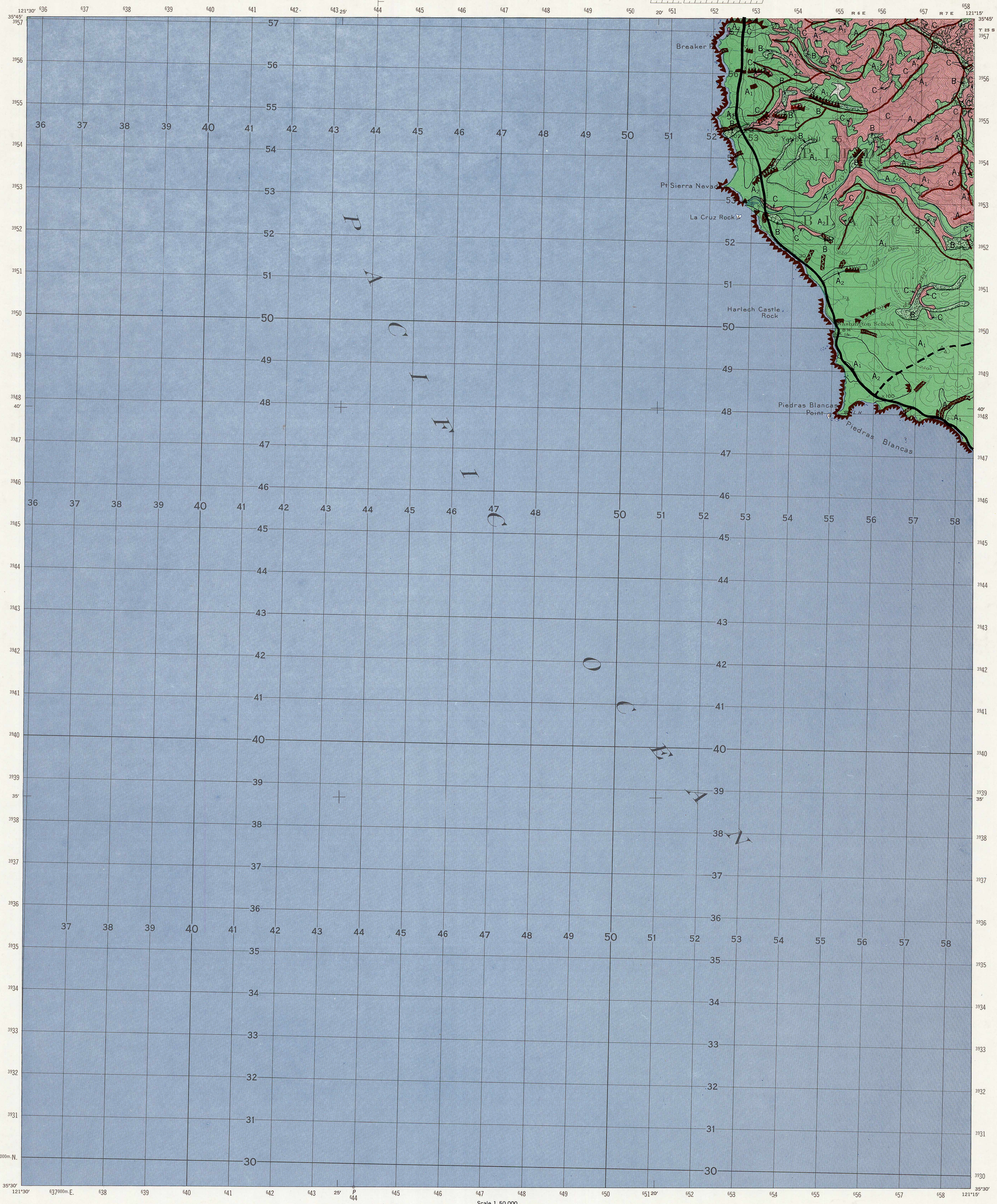
REFER TO THIS MAP AS: ROADS AND BRIDGES BRADLEY, CALIF.

CALIFORNIA 1:50,000

EDITION 1—AMS—CCM 1

CROSS-COUNTRY MOVEMENT

SHEET 1755 III
SERIES V795



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CONTOUR INTERVAL 50 FEET
VERTICAL DATUM: MEAN SEA LEVEL

TRANSVERSE MERCATOR PROJECTION
HORIZONTAL DATUM: 1927 NORTH AMERICAN DATUM

GRID LINES INDICATE 1,000 METER UNIVERSAL TRANSVERSE MERCATOR GRID, ZONE 10

SUPPLEMENTAL LEGEND

Ridge lines

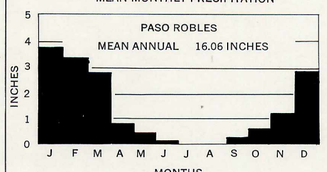
Escarpments

Selected Road Net

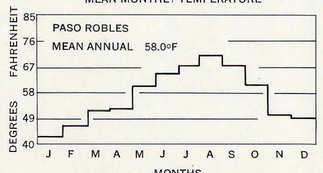
Paved roads

Unpaved roads

MEAN MONTHLY PRECIPITATION

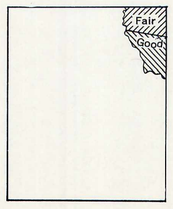


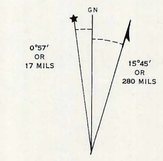
MEAN MONTHLY TEMPERATURE



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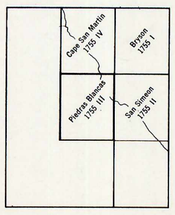
RELIABILITY DIAGRAM





APPROXIMATE MEAN DECLINATION 1950
FOR CENTER OF SHEET
ANNUAL MAGNETIC CHANGE 2′ WESTERLY

INDEX TO ADJOINING SHEETS



CROSS-COUNTRY MOVEMENT LEGEND 1/

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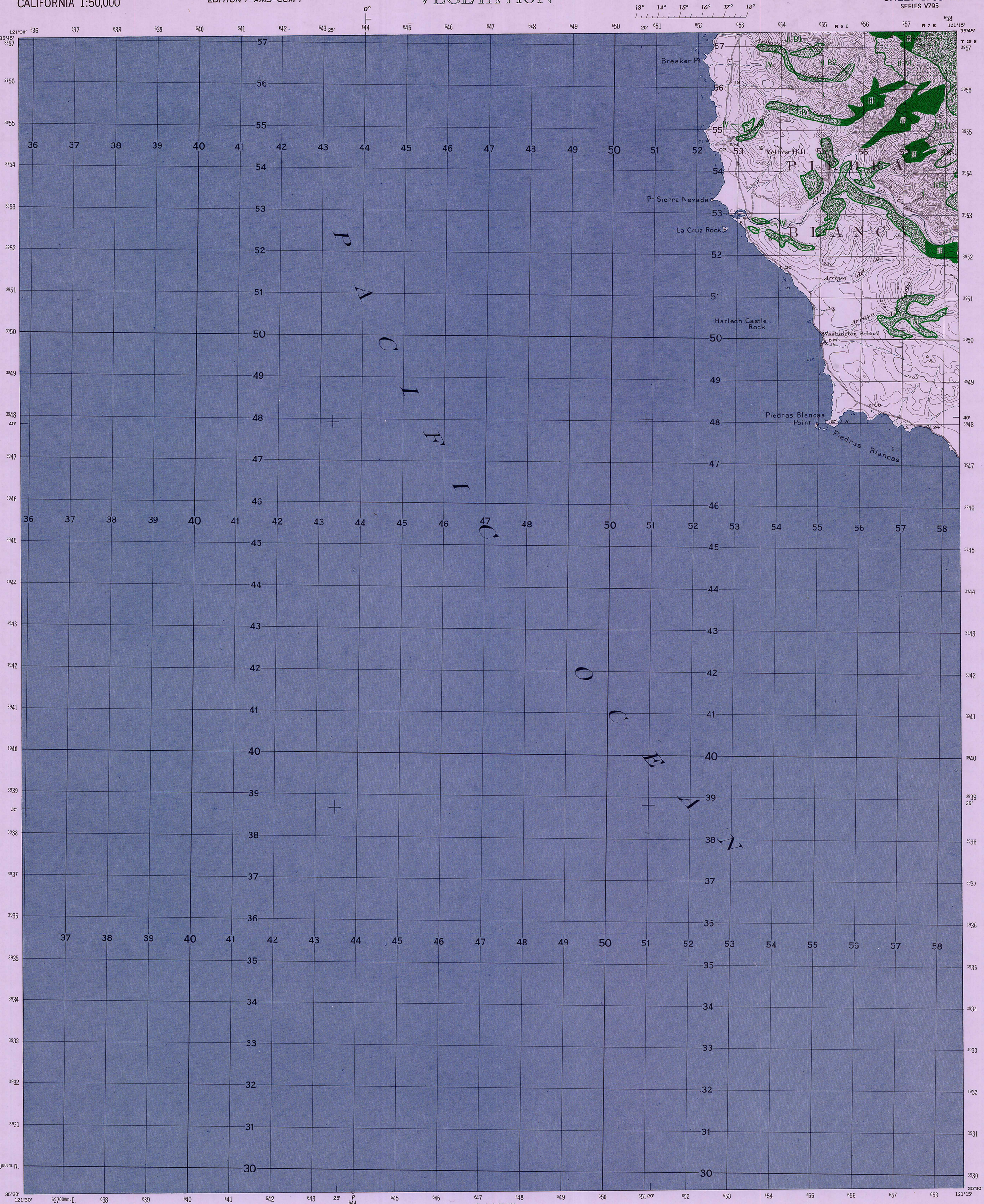
REFER TO THIS MAP AS: CROSS COUNTRY MOVEMENT PIEDRAS BLANCAS, CALIF.

CALIFORNIA 1:50,000

EDITION 1–AMS–CCM 1

VEGETATION

SHEET 1755 III
SERIES V795



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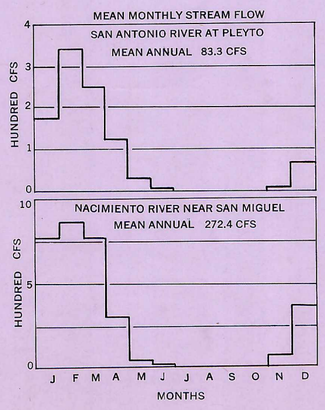
CONTOUR INTERVAL 50 FEET
VERTICAL DATUM: MEAN SEA LEVEL

TRANSVERSE MERCATOR PROJECTION
HORIZONTAL DATUM: 1927 NORTH AMERICAN DATUM

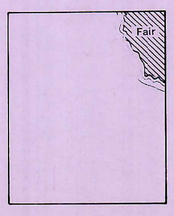
GRID LINES INDICATE 1,000 METER UNIVERSAL TRANSVERSE MERCATOR GRID, ZONE 10

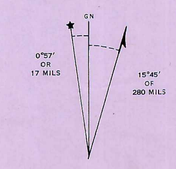
Rock outcrops
Stream, intermittent
Spring
Low dam
Gaging station

MEAN MONTHLY STREAM FLOW



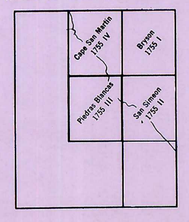
RELIABILITY DIAGRAM





APPROXIMATE MEAN DECLINATION 1950
FOR CENTER OF SHEET
ANNUAL MAGNETIC CHANGE 2' WESTERLY

INDEX TO ADJOINING SHEETS



VEGETATION LEGEND

UNIT	VEGETATION TYPE	DENSITY OF CANOPY 1/	GROUND VISIBILITY	EFFECT ON CROSS-COUNTRY MOVEMENT (Based on the characteristics of M-47 tank.)
1	Open areas: grassland, fields, sagebrush, etc.	0–10%	Unlimited by vegetation	Vegetation no restriction
IIA1	Woodland–grass 2/	10–40%	Good	Vegetation no restriction
IIA2	Discontinuous woods 2/	10–40%	Variable	May require by-passing a few stands; generally no restriction.
IIB1	Open woods 2/	40–70%	Good	May require by-passing dense stands; no restrictions on foot troops.
IIB2	Discontinuous woods 2/	40–70%	Variable	Will require by-passing dense stands; area as a whole no obstacle. Brush may hinder foot troops.
III	Dense woods	70–100%	Poor	Generally impractical for vehicles. Brush may hinder foot troops.
IV	Brush	Variable 3/	Variable 3/	Generally impractical for vehicles except on low slopes. Very difficult for foot troops.
IVA	Open brush	0–10%	Poor to unlimited	Generally no limitation to vehicles, locally may hinder foot troops.

1/ Considered 10′ above ground. Estimated for period April–November when all trees are in leaf. During period November–April canopy density is reduced to less than ¼ of these values in woods east of Santa Lucia Range. There is no appreciable change in the mountains as most trees are non-deciduous.
2/ Trees in IIA1 and IIB1 are distributed evenly; in IIA2 and IIB2 they are grouped in dense clumps, commonly along streams or in gullies.
3/ On northeast slopes east of the crest of the Santa Lucia Range canopy density is high and ground visibility is poor; on southwest slopes visibility is fair and density of canopy is low. West of the range canopy density is low and visibility is fair. For 5-10 yrs. subsequent to severe brush fires ground visibility is good and vegetation is no limitation to movement.

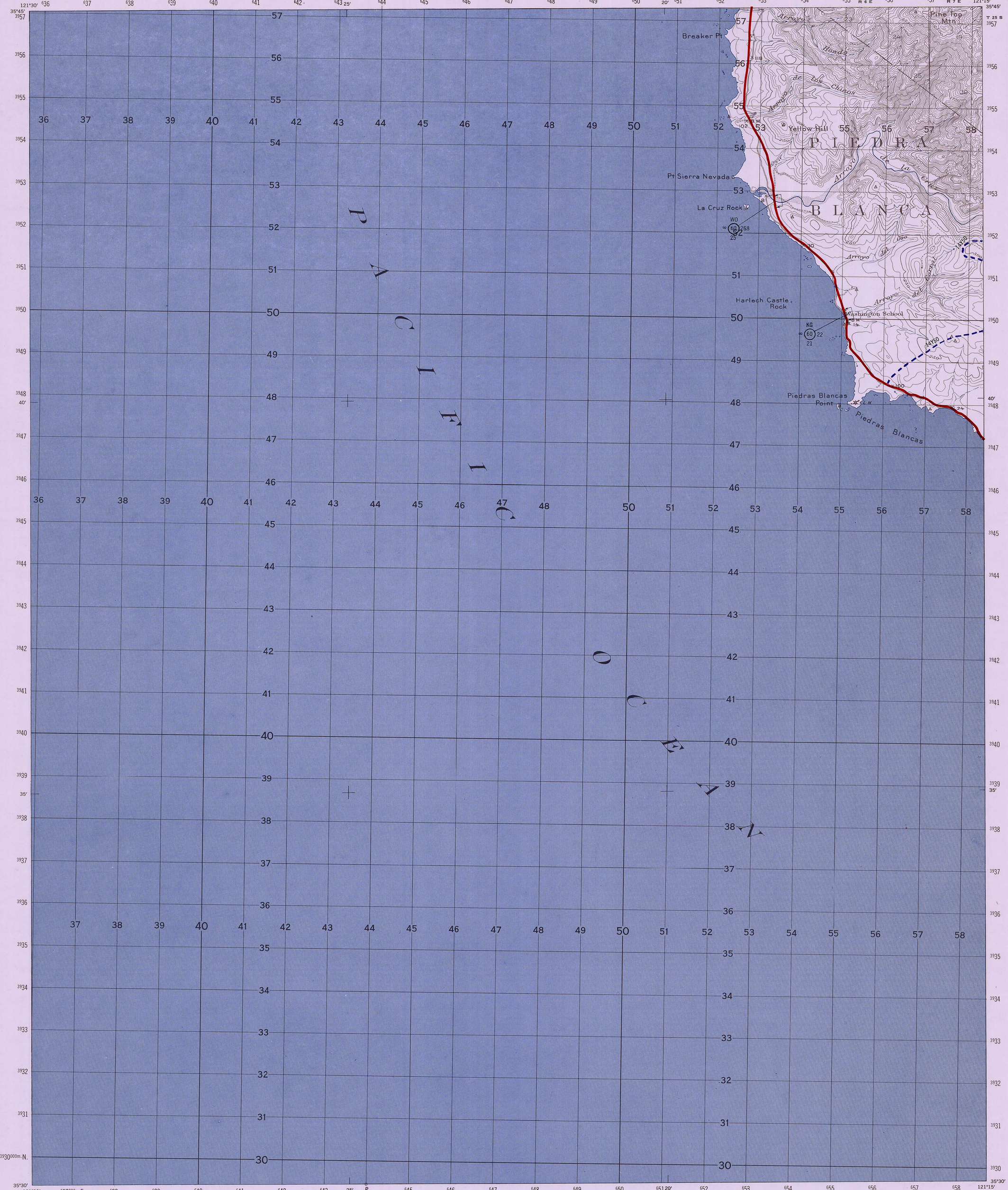
REFER TO THIS MAP AS: VEGETATION PIEDRAS BLANCAS, CALIF.

CALIFORNIA 1:50,000

EDITION 1–AMS–CCM 1

ROADS AND BRIDGES

SHEET 1755 III
SERIES V795



Prepared by 535th Engineer Detachment (Terrain), AMS, Washington, D. C. Slope determined from California, 1:50,000, Series V795. Vegetation compiled from photo interpretation supplemented by field reconnaissance. Soils classified by laboratory tests. Area limits of soils from Department of Agriculture Soils Surveys, supplemented by photo interpretation and field reconnaissance. Soils trafficability classification from TM 3-240, supplement II, Waterways Experiment Station, Vicksburg, Mississippi.

Scale 1 50,000

1 0 1 2 3 Miles

1000 500 0 1000 2000 3000 4000 Meters

1000 500 0 1000 2000 3000 4000 Yards

CONTOUR INTERVAL 50 FEET
VERTICAL DATUM: MEAN SEA LEVEL

TRANSVERSE MERCATOR PROJECTION
HORIZONTAL DATUM: 1927 NORTH AMERICAN DATUM

GRID LINES INDICATE 1,000 METER UNIVERSAL TRANSVERSE MERCATOR GRID, ZONE 10

BRIDGE INFORMATION

T
Clr. C L
W

C - One way capacity in tons
T - Type of construction (see bridge type symbols)
L - Total length in feet
W - Width of travelled way in feet
Clr. - Vertical clearance in feet and inches
✳ - An asterisk appearing in the bridge symbol has been used only when a route has an appreciably higher classification except for isolated restrictive bridges. When such a bridge occurs, the route has been given the higher classification.

- Bridge bypass easy
- Bridge bypass difficult
- Bridge bypass impossible

BRIDGE TYPE SYMBOLS

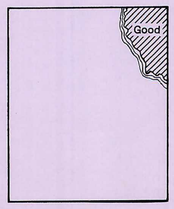
WO - Wood trestle
WOT - Wood truss
SG - Steel girder
SS - Steel stringer
ST - Steel truss
KA - Concrete arch
KG - Concrete girder
KS - Concrete slab

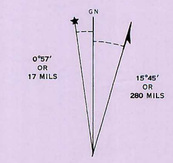
ROUTE CLASSIFICATION (EXAMPLE)

WO
G ∞ 30 1100
18
15X50 15X30
F

15 - Wicth of roadway in feet
X - All weather road
50 - Route capacity in tons
G - Locked gate
• - Point of change in classification of road
- Bridge bypass difficult
F - Location of ford
K
(F - Concrete ford)
WO - Wood trestle
1100 - Total length in feet
18 - Width of travelled way in feet
∞ - Unlimited vertical clearance
30 - Class 30 bridge

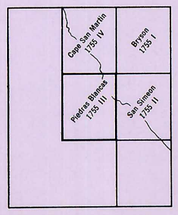
RELIABILITY DIAGRAM





APPROXIMATE MEAN DECLINATION 1950
FOR CENTER OF SHEET
ANNUAL MAGNETIC CHANGE 2' WESTERLY

INDEX TO ADJOINING SHEETS



ROAD CLASSIFICATION

HARD SURFACE HIGHWAY
(All weather road -X)
Class 50 or greater and 2 lanes
Less than class 50 and or single lane

IMPROVED ROAD
(Limited all weather road -Y)
Class 50 or greater and 2 lanes
Less than class 50 and or single lane

DIRT ROAD
(Fair weather road -Z)
Class 50 or greater and 2 lanes
Less than class 50 and or single lane
Not recommended for vehicles heavier than 3/4 ton (Four wheel drive necessary)
Proposed road

NOTES:
1. Routes having road widths of 18 feet or over are 2 lanes.
2. Unclassified roads, trails, and firebreaks should be used only after reconnaissance.

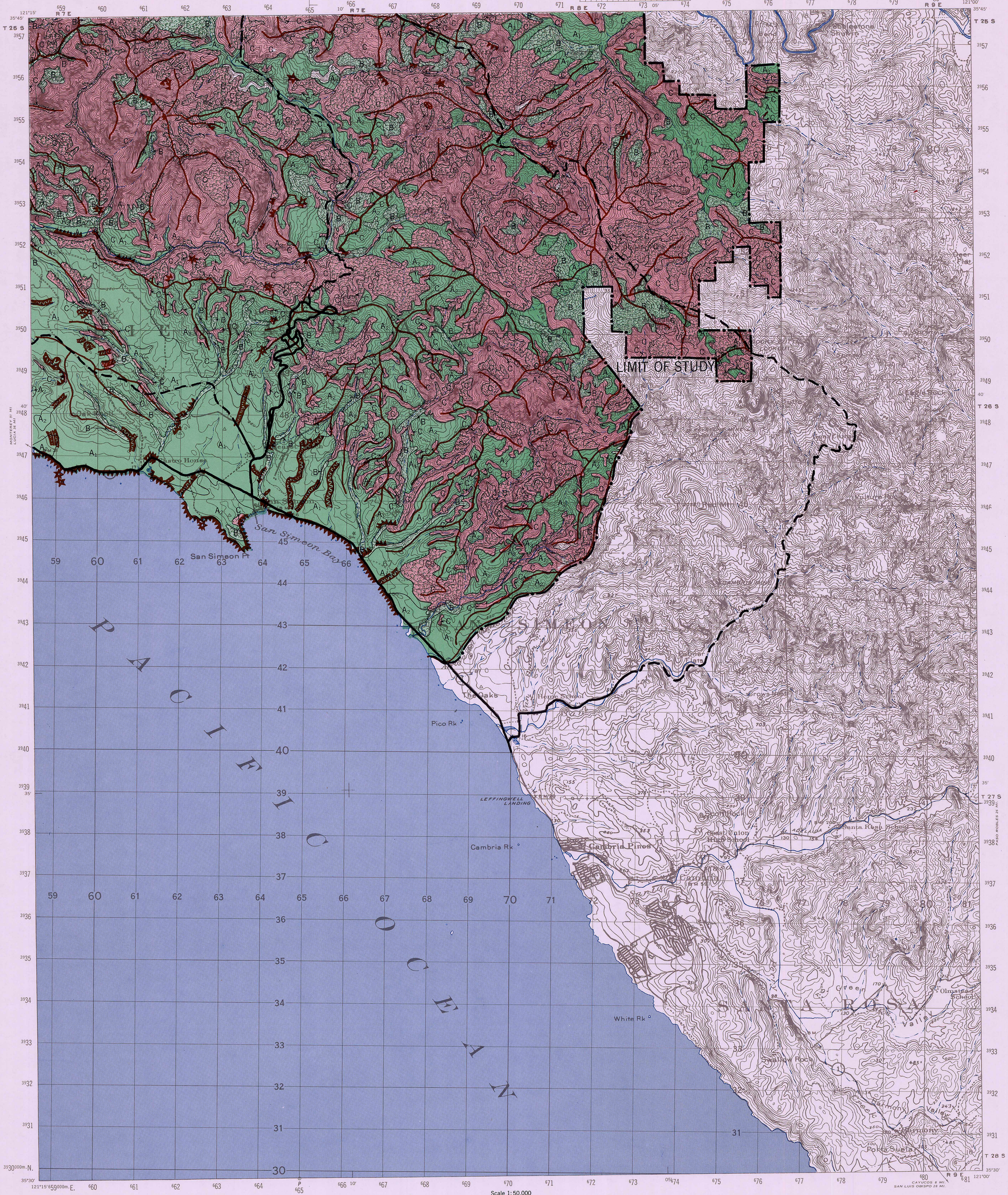
REFER TO THIS MAP AS: ROADS AND BRIDGES PIEDRAS BLANCAS, CALIF.

CROSS-COUNTRY MOVEMENT

CALIFORNIA 1:50,000

EDITION 3–AMS–CCM 1

SHEET 1755 II
SERIES V795



Prepared by 535th Engineer Detachment (Terrain), AMS, Washington, D. C. Slope determined from California, 1:50,000, Series V795. Vegetation compiled from photo interpretation supplemented by field reconnaissance. Soils classified by laboratory tests. Area limits of soils from Department of Agriculture Soils Surveys, supplemented by photo interpretation and field reconnaissance. Soils trafficability classification from TM 3-240, supplement II, Waterways Experiment Station, Vicksburg, Mississippi.

Scale 1:50,000

1 0 1 2 3 Miles

1000 500 0 1000 2000 3000 4000 Meters

1000 500 0 1000 2000 3000 4000 Yards

CONTOUR INTERVAL 50 FEET
DATUM IS MEAN SEA LEVEL

TRANSVERSE MERCATOR PROJECTION
HORIZONTAL DATUM: 1927 NORTH AMERICAN DATUM

GRID LINES INDICATE 1,000 METER UNIVERSAL TRANSVERSE MERCATOR GRID, ZONE 10

SUPPLEMENTAL LEGEND

Ridge lines

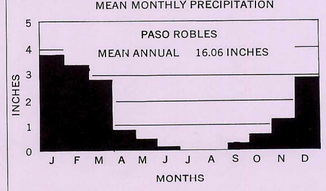
Escarpments

Selected Road Net

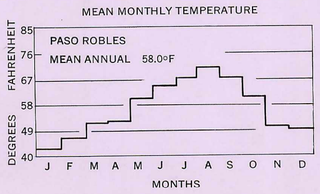
Paved roads

Unpaved roads

MEAN MONTHLY PRECIPITATION

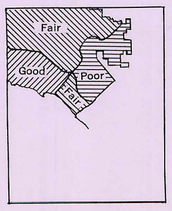


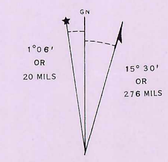
MEAN MONTHLY TEMPERATURE



NOTE: Precipitation and temperature graphs shown for Paso Robles are used to indicate seasonal variation and are not indicative of the entire study area. Data on these subjects may be found in the general text for various stations in the area.

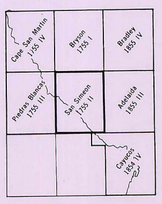
RELIABILITY DIAGRAM





APPROXIMATE MEAN DECLINATION 1953
FOR CENTER OF SHEET
ANNUAL MAGNETIC CHANGE 2' WESTERLY

INDEX TO ADJOINING SHEETS



CROSS-COUNTRY MOVEMENT LEGEND 1/

MAP UNIT	SOIL CONDITION		EXPLANATION
	Dry 2/	Wet 3/	
A	Passable	Passable	—No obstacles to passage or maneuvering or vehicles.
A_1	Passable	Difficult	—The soils when wet will support limited traffic but little or no maneuvering of vehicles.
A_2	Passable	Impractical	—The soils when wet probably will not support passage of more than one vehicle and will not support any maneuvering.
B	Difficult	Impractical	—Movement limited by brush density or by trunk spacing which necessitates extensive maneuvering.
C	Impractical	Impractical	—Trunk spacing or heavy brush denies all vehicular movement. Soils not evaluated.
X	Impractical	Impractical	—Extremely rocky or broken topography denies all vehicular movement. Soils and vegetation not evaluated.
C	Impractical	Impractical	—Slope of 45% or greater. Soils and vegetation not evaluated.
	Saturated areas		—Areas that remain impractical for approximately 45 days following the wet season.

1/ Evaluation of material for this study is based on the maneuvering characteristics of the M-47 tank. Local reconnaissance is needed where detail greater than feasible on the scale of this map is required. This study is essentially concerned with off-road movement.
2/ During the dry period (generally mid-April to late November) soil moisture content is low.
3/ During the wet period (generally late November to mid-April) soils are near saturation.

REFER TO THIS MAP AS: CROSS COUNTRY MOVEMENT SAN SIMEON, CALIF.

VEGETATION

CALIFORNIA 1:50,000

EDITION 3—AMS—CCM 1

SHEET 1755 II

SERIES V795

LIMIT OF STUDY

LIMIT OF PHOTO COVERAGE

PACIFIC OCEAN

SAN SIMEON

SANTA ROSA

Prepared by 535th Engineer Detachment (Terrain), AMS, Washington, D. C. Slope determined from California, 1:50,000, Series V795. Vegetation compiled from photo interpretation supplemented by field reconnaissance. Soils classified by laboratory tests. Area limits of soils from Department of Agriculture Soils Surveys, supplemented by photo interpretation and field reconnaissance. Soils trafficability classification from TM 3-240, supplement II, Waterways Experiment Station, Vicksburg, Mississippi.

Scale 1:50,000

1 0 1 2 3 Miles

1000 500 0 1000 2000 3000 4000 Meters

1000 500 0 1000 2000 3000 4000 Yards

CONTOUR INTERVAL 50 FEET

DATUM IS MEAN SEA LEVEL

TRANSVERSE MERCATOR PROJECTION

HORIZONTAL DATUM: 1927 NORTH AMERICAN DATUM

GRID LINES INDICATE 1,000 METER UNIVERSAL TRANSVERSE MERCATOR GRID, ZONE 10

Rock outcrops

Stream, intermittent

Spring

Low dam

Gaging station

MEAN MONTHLY STREAM FLOW

SAN ANTONIO RIVER AT PLEYTO

MEAN ANNUAL 83.3 CFS

NACIMIENTO RIVER NEAR SAN MIGUEL

MEAN ANNUAL 272.4 CFS

HUNDRED CFS

J F M A M J J A S O N D

MONTHS

RELIABILITY DIAGRAM

Fair

Poor

APPROXIMATE MEAN DECLINATION 1933 FOR CENTER OF SHEET

ANNUAL MAGNETIC CHANGE 2' WESTERLY

INDEX TO ADJOINING SHEETS

Cape San Martin 1755 IV

Bryson 1755 I

Bixby 1855 IV

Pleyto Blanco 1755 II

San Simeon 1755 III

Adelaida 1855 III

Cypress 1854 IV

VEGETATION LEGEND

UNIT	VEGETATION TYPE	DENSITY OF CANOPY 1/	GROUND VISIBILITY	EFFECT ON CROSS-COUNTRY MOVEMENT (Based on the characteristics of M-47 tank.)
1	Open areas: grassland, fields, sagebrush, etc.	0–10%	Unlimited by vegetation	Vegetation no restriction
IIA1	Woodland–grass 2/	10–40%	Good	Vegetation no restriction
IIA2	Discontinuous woods 2/	10–40%	Variable	May require by-passing a few stands; generally no restriction.
IIB1	Open woods 2/	40–70%	Good	May require by-passing dense stands; no restrictions on foot troops.
IIB2	Discontinuous woods 2/	40–70%	Variable	Will require by-passing dense stands; area as a whole no obstacle. Brush may hinder foot troops.
III	Dense woods	70–100%	Poor	Generally impractical for vehicles. Brush may hinder foot troops.
IV	Brush	Variable 3/	Variable 3/	Generally impractical for vehicles except on low slopes. Very difficult for foot troops.
IVA	Open brush	0–10%	Poor to unlimited	Generally no limitation to vehicles, locally may hinder foot troops.

1/ Considered 10' above ground. Estimated for period April–November when all trees are in leaf. During period November–April canopy density is reduced to less than ¼ of these values in woods east of Santa Lucia Range. There is no appreciable change in the mountains as most trees are non-deciduous.

2/ Trees in IIA1 and IIB1 are distributed evenly; in IIA2 and IIB2 they are grouped in dense clumps, commonly along streams or in gullies.

3/ On northeast slopes east of the crest of the Santa Lucia Range canopy density is high and ground visibility is poor; on southwest slopes visibility is fair and density of canopy is low. West of the range canopy density is low and visibility is fair. For 5-10 yrs. subsequent to severe brush fires ground visibility is good and vegetation is no limitation to movement.

REFER TO THIS MAP AS: VEGETATION SAN SIMEON, CALIF.

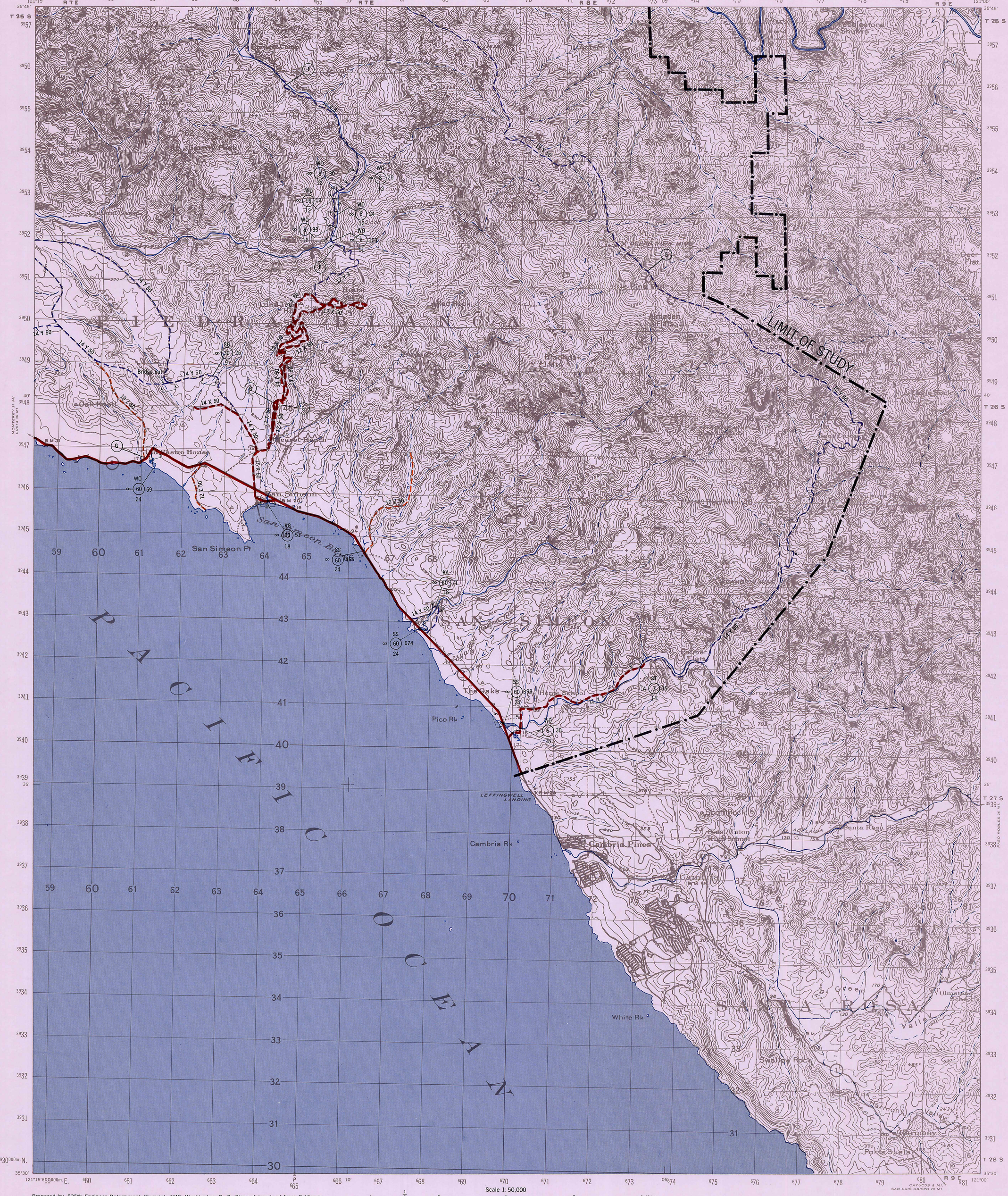
ROADS AND BRIDGES

CALIFORNIA 1:50,000

EDITION 3—AMS—CCM 1

SHEET 1755 II

SERIES V795


LIMIT OF STUDY
PACIFIC OCEAN
SAN SIMEON
SANTA ROSA
San Simeon Pt
San Simeon
Pico Rk
Cambria Rk
White Rk
Cambria Pines
Leffingwell Landing
Hearst Castro House
Bridge out
Oak Knoll
Coast Union High School
Santa Rosa Creek
Shamel Valley
Harmony
Harmony Valley
Pola Suela
Shallow Rock
Deer Flat
Adelaida
Cayucos
Olmsted School
Scott Rock
Creek
Flats
Meadow
Mine
Ranch
Spring
Tank
Trail
Road
Fork
Valley
Hill
Mt
Peak
Rk
Pt
Cove
Beach
Creek
Canyon
Gulch
Ridge
Slope
Flat
Meadows
Orchard
Vineyard
Cemetery
Church
School
Ranch House
Windmill
Tank
Spring
Mine
Quarry
Trail
Road
Fork
Bridge
Ford
Dam
Levee
Pipeline
Power Line
Fence
Boundary
Section Line
Township Line
Land Grant
Contour
Index Contour
Depression Contour
Fill
Cut
Levee
Dam

CALIFORNIA 1:50,000

EDITION 1–CCM

CROSS-COUNTRY MOVEMENT

CAMP ROBERTS
SERIES V795

LIMIT OF STUDY

LIMIT OF STUDY

LIMIT OF STUDY

Prepared by 535th Engineer Detachment (Terrain), AMS, Washington, D. C. Slope determined from California, 1:50,000, Series V795. Vegetation compiled from photo interpretation supplemented by field reconnaissance. Soils classified by laboratory tests. Area limits of soils from Department of Agriculture Soils Surveys, supplemented by photo interpretation and field reconnaissance. Soils trafficability classification from TM 3-240, supplement II, Waterways Experiment Station, Vicksburg, Mississippi.

Scale 1 50,000

1 0 1 2 3 Miles

1000 500 0 1000 2000 3000 4000 Meters

1000 500 0 1000 2000 3000 4000 Yards

CONTOUR INTERVAL 20 AND 40 FEET
WITH SUPPLEMENTARY CONTOURS AT 20 FOOT INTERVALS
VERTICAL DATUM: SEA LEVEL DATUM OF 1929

TRANSVERSE MERCATOR PROJECTION
HORIZONTAL DATUM: 1927 NORTH AMERICAN DATUM

GRID LINES INDICATE 1,000 METER UNIVERSAL
TRANSVERSE MERCATOR GRID, ZONE 10

SUPPLEMENTAL LEGEND

Ridge lines

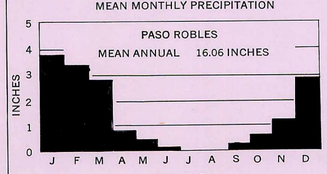
Escarpments

Selected Road Net

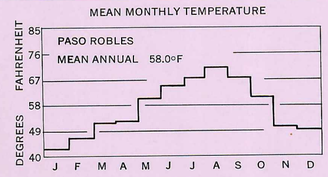
Paved roads

Unpaved roads

MEAN MONTHLY PRECIPITATION

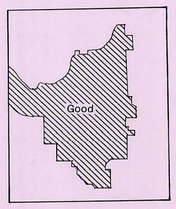


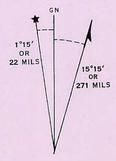
MEAN MONTHLY TEMPERATURE



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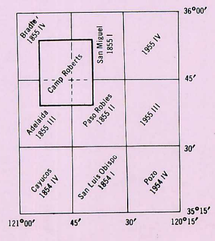
RELIABILITY DIAGRAM





APPROXIMATE MEAN DECLINATION 1952
FOR CENTER OF SHEET
ANNUAL MAGNETIC CHANGE 2' WESTERLY

INDEX TO ADJOINING SHEETS



CROSS-COUNTRY MOVEMENT LEGEND 1/

MAP UNIT	SOIL CONDITION		EXPLANATION
	Dry 2/	Wet 3/	
A	Passable	Passable	—No obstacles to passage or maneuvering or vehicles.
A_1	Passable	Difficult	—The soils when wet will support limited traffic but little or no maneuvering of vehicles.
A_2	Passable	Impractical	—The soils when wet probably will not support passage of more than one vehicle and will not support any maneuvering.
B	Difficult	Impractical	—Movement limited by brush density or by trunk spacing which necessitates extensive maneuvering.
B/C	Impractical	Impractical	—Trunk spacing or heavy brush denies all vehicular movement. Soils not evaluated.
C	Impractical	Impractical	—Extremely rocky or broken topography denies all vehicular movement. Soils and vegetation not evaluated.
C	Impractical	Impractical	—Slope of 45% or greater. Soils and vegetation not evaluated.
	Saturated areas		—Areas that remain impractical for approximately 45 days following the wet season.

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2/ During the dry period (generally mid-April to late November) soil moisture content is low.
3/ During the wet period (generally late November to mid-April) soils are near saturation.

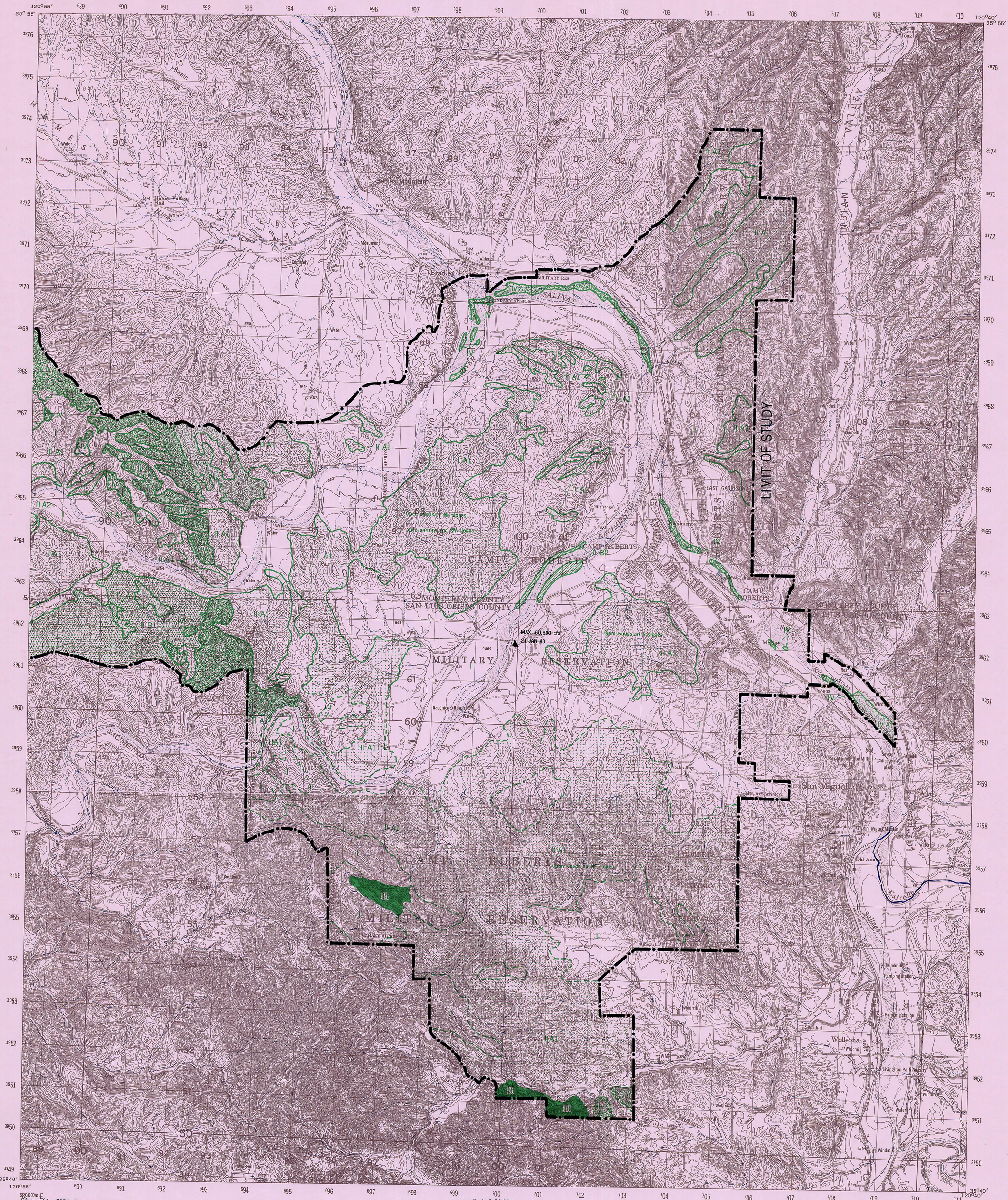
REFER TO THIS MAP AS: CROSS-COUNTRY MOVEMENT CAMP ROBERTS, CALIF.

CALIFORNIA 1:50,000

EDITION 1–CCM

VEGETATION

CAMP ROBERTS
SERIES V795



689000m.E

Prepared by 535th Engineer Detachment (Terrain), AMS, Washington, D. C. Slope determined from California, 1:50,000, Series V795. Vegetation compiled from photo interpretation supplemented by field reconnaissance. Soils classified by laboratory tests. Area limits of soils from Department of Agriculture Soils Surveys, supplemented by photo interpretation and field reconnaissance. Soils trafficability classification from TM 3-240, supplement II, Waterways Experiment Station, Vicksburg, Mississippi.

Scale 1 50,000

½ 0 1 2 3 Miles

1000 500 0 1000 2000 3000 4000 Meters

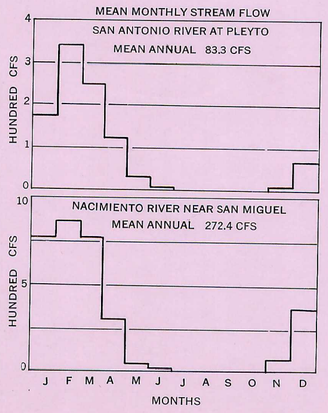
1000 500 0 1000 2000 3000 4000 Yards

CONTOUR INTERVAL 20 AND 40 FEET
WITH SUPPLEMENTARY CONTOURS AT 20 FOOT INTERVALS
VERTICAL DATUM: SEA LEVEL DATUM OF 1929

TRANSVERSE MERCATOR PROJECTION
HORIZONTAL DATUM: 1927 NORTH AMERICAN DATUM

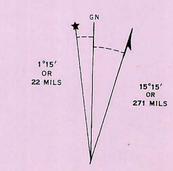
GRID LINES INDICATE 1,000 METER UNIVERSAL TRANSVERSE MERCATOR GRID, ZONE 10

MEAN MONTHLY STREAM FLOW



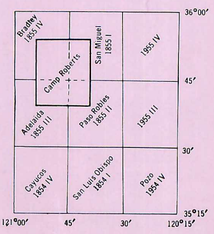
RELIABILITY DIAGRAM





APPROXIMATE MEAN DECLINATION 1952
FOR CENTER OF SHEET
ANNUAL MAGNETIC CHANGE 2′ WESTERLY

INDEX TO ADJOINING SHEETS



VEGETATION LEGEND

UNIT	VEGETATION TYPE	DENSITY OF CANOPY 1/	GROUND VISIBILITY	EFFECT ON CROSS-COUNTRY MOVEMENT (Based on the characteristics of M-47 tank.)
1	Open areas: grassland, fields, sagebrush, etc.	0–10%	Unlimited by vegetation	Vegetation no restriction
IIA1	Woodland–grass 2/	10–40%	Good	Vegetation no restriction
IIA2	Discontinuous woods 2/	10–40%	Variable	May require by-passing a few stands; generally no restriction.
IIB1	Open woods 2/	40–70%	Good	May require by-passing dense stands; no restrictions on foot troops.
IIB2	Discontinuous woods 2/	40–70%	Variable	Will require by-passing dense stands; area as a whole no obstacle. Brush may hinder foot troops.
III	Dense woods	70–100%	Poor	Generally impractical for vehicles. Brush may hinder foot troops.
IV	Brush	Variable 3/	Variable 3/	Generally impractical for vehicles except on low slopes. Very difficult for foot troops.
IVA	Open brush	0–10%	Poor to unlimited	Generally no limitation to vehicles, locally may hinder foot troops.

1/ Considered 10′ above ground. Estimated for period April–November when all trees are in leaf. During period November–April canopy density is reduced to less than ¼ of these values in woods east of Santa Lucia Range. There is no appreciable change in the mountains as most trees are non-deciduous.

2/ Trees in IIA1 and IIB1 are distributed evenly; in IIA2 and IIB2 they are grouped in dense clumps, commonly along streams or in gullies.

3/ On northeast slopes east of the crest of the Santa Lucia Range canopy density is high and ground visibility is poor; on southwest slopes visibility is fair and density of canopy is low. West of the range canopy density is low and visibility is fair. For 5-10 yrs. subsequent to severe brush fires ground visibility is good and vegetation is no limitation to movement.

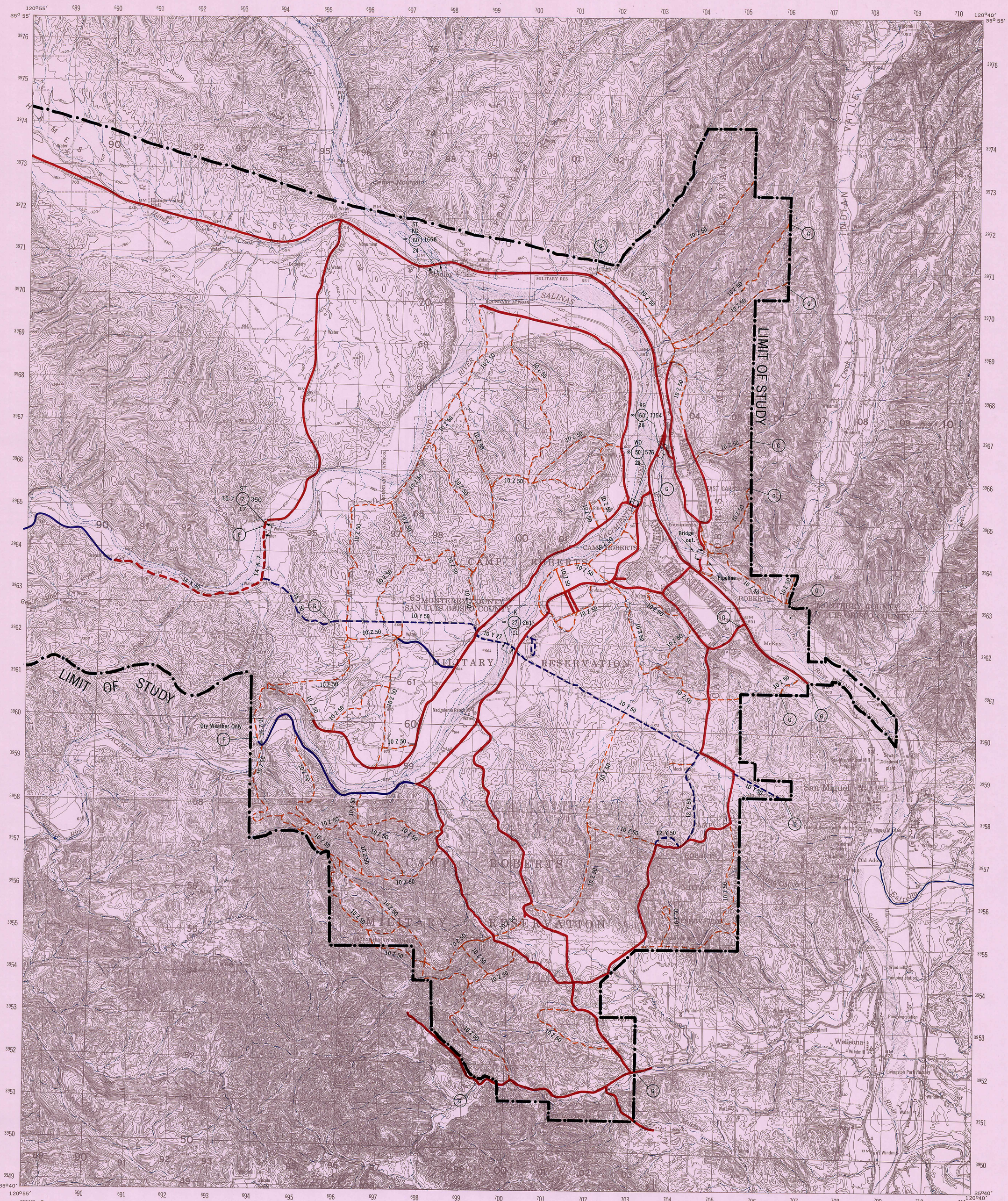
REFER TO THIS MAP AS: VEGETATION CAMP ROBERTS, CALIF.

CALIFORNIA 1:50,000

EDITION 1–CCM

ROADS AND BRIDGES

CAMP ROBERTS
SERIES V795



Prepared by 535th Engineer Detachment (Terrain), AMS, Washington, D. C. Slope determined from California, 1:50,000, Series V795. Vegetation compiled from photo interpretation supplemented by field reconnaissance. Soils classified by laboratory tests. Area limits of soils from Department of Agriculture Soils Surveys, supplemented by photo interpretation and field reconnaissance. Soils trafficability classification from TM 3-240, supplement II, Waterways Experiment Station, Vicksburg, Mississippi.

TRANSVERSE MERCATOR PROJECTION
HORIZONTAL DATUM: 1927 NORTH AMERICAN DATUM

GRID LINES INDICATE 1,000 METER UNIVERSAL TRANSVERSE MERCATOR GRID, ZONE 10

BRIDGE INFORMATION

T
Clr. C L
W

C - One way capacity in tons
T - Type of construction (see bridge type symbols)
L - Total length in feet
W - Width of travelled way in feet
Clr. - Vertical clearance in feet and inches
* - An asterisk appearing in the bridge symbol has been used only when a route has an appreciably higher classification except for isolated restrictive bridges. When such a bridge occurs, the route has been given the higher classification.

- Bridge bypass easy
- Bridge bypass difficult
- Bridge bypass impossible

BRIDGE TYPE SYMBOLS

WO - Wood trestle
WOT - Wood truss
SG - Steel girder
SS - Steel stringer
ST - Steel truss
KA - Concrete arch
KG - Concrete girder
KS - Concrete slab

ROUTE CLASSIFICATION (EXAMPLE)

WO
G ∞ 30 1100
18
15X50 15X30
F

15 - Width of roadway in feet
X - All weather road
50 - Route capacity in tons
G - Locked gate
• - Point of change in classification of road
- Bridge bypass difficult
F - Location of ford
K
(F - Concrete ford)
WO - Wood trestle
1100 - Total length in feet
18 - Width of travelled way in feet
∞ - Unlimited vertical clearance
30 - Class 30 bridge

ROAD CLASSIFICATION

HARD SURFACE HIGHWAY
(All weather road -X)
Class 50 or greater and 2 lanes
Less than class 50 and or single lane

IMPROVED ROAD
(Limited all weather road -Y)
Class 50 or greater and 2 lanes
Less than class 50 and or single lane

DIRT ROAD
(Fair weather road -Z)
Class 50 or greater and 2 lanes
Less than class 50 and or single lane
Not recommended for vehicles heavier than 3/4 ton (Four wheel drive necessary)
Proposed road

NOTES:
1. Routes having road widths of 18 feet or over are 2 lanes.
2. Unclassified roads, trails, and firebreaks should be used only after reconnaissance.

ROADS AND BRIDGES CAMP ROBERTS, CALIF.

REFER TO THIS MAP AS: